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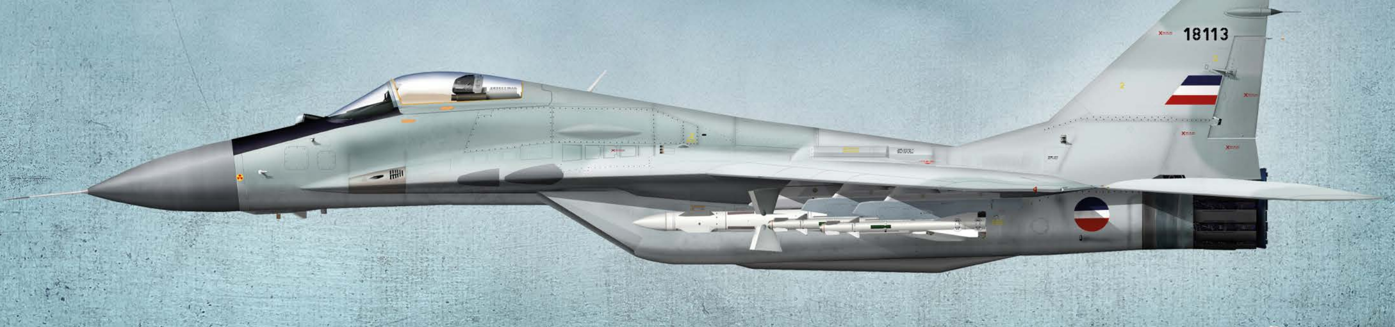
OPERATION ALLIED FORCE

AIR WAR OVER SERBIA 1999

VOLUME 1



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MAP OF EUROPE SINCE 1992

Note: In order to simplify the use of this book, all names, locations and geographic designations are as provided in *The Times World Atlas*, or other traditionally accepted major sources of reference, as of the time of described events.

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ABBREVIATIONS

AAA	anti-aircraft artillery
ABCCC	Airborne Battlefield Command and Control Centre
ABG	Air Base Group
ACTORD	Activation Order
AD	Air Defence
AGM	Air to Ground Missile
AEW	Airborne Early Warning
AEW	Air Expeditionary Wing
A-FAC	Airborne Forward Air Controller
AFB	Air Force Base
AFRES	Air Force Reserve
AFSOUTH	Commander-in-Chief of the Allied Forces in South Europe
AIRSOUTH	Allied Air Force Commander in South Europe
ALA	Armée de l' Air
ALAT	Aviation légère de l'armée de Terre (French Army Light Aviation)
AMI	Aeronatuica Militare Italiana (Italian Air Force)
ANG	Air National Guard
ARS	Air Refuelling Squadron
ARW	Air Refuelling Wing
AS	Airlift Squadron
AS	Air Surveillance
ATAF	Allied Tactical Air Force
ATGM	Anti-Tank Guided Missile
AW	Airlift Wing
AWACS	Airborne Warning and Control System
BAI	Battlefield Air Interdiction
BDA	Battle Damage Assessment
BS	Bomber Squadron
BW	Bomber Wing
CAG	Carrier Air Group
C-ALCM	Conventional Air Launched Cruise Missile
CAOC	Combined Air Operations Centre
CAP	Combat Air Patrol
CAS	Close Air Support
CAW	Carrier Air Wing
CINCSOUTH	Commander-in-Chief, Allied Forces Southern Europe
COMAIRSOUTH	Commander Allied Air Forces Southern Europe
CONUS	Continental United States
CSAR	Combat Search and Rescue
DF	Deliberate Force
DoD	Department of Defense
ECR	Electronic Combat and Reconnaissance
ECM	Electronic Countermeasures
EFS	Expeditionary Fighter Squadron
ELINT	Electronic Intelligence
EOG	Expeditionary Operations Group
FAC	Forward Air Controller
FRY	Federal Republic of Yugoslavia
FS	Fighter Squadron
FW	Fighter Wing
HARM	High-Speed Anti-Radiation Missile
HAS	Hardened Aircraft Shelter
HTS	HARM Targeting System
J-STARS	Joint Surveillance Target Attack Radar System
LANTIRN	Low Altitude Navigation and Targeting Infrared for Night
KVM	Kosovo Verification Mission
KFOR	Kosovo Force
MANPADS	Man Portable Air Defence System
MEDIEVAC	Medical Evacuation
MLRS	Multiple Launch Rocket System
NAC	North Atlantic Council
NAC/DoD	National Archives Catalogue/US Department of Defense
NAEWF	NATO Airborne Early Warning Force
NATO	North Atlantic Treaty Organisation
PGM	Precision Guided Missile
PVO	protivvazdušna odbrana (Air Defence)
OAF	Operation Allied Force

OSCE	Organisation for Security and Cooperation in Europe
QRA	Quick Reaction Alert
RAF	Royal Air Force (United Kingdom)
RCAF	Royal Canadian Air Force
RDB	Resor državne bezbednosti (Serbian State Security)
RED HORSE	Rapid Engineer Deployable Heavy Operational Repair Squadron Engineer
RNLAF	Royal Netherlands Air Force
ROE	Rules of Engagement
RRF	Rapid Reaction Force
R-StON	radarska stanica za osmatranje i navođenje (Kub-M or SA-6 battery radar)
RS	Reconnaissance Squadron
RV i PVO	Ratno vazduhoplovstvo i protivvazdušna odbrana (Air Force and Air Defence)
RW	Reconnaissance Wing
SACEUR	Supreme Allied Commander Europe
SA or SAM	Surface to Air Missile
SC UN	Security Council (United Nations)
SEAD	Suppression of Enemy Air Defence
SHAPE	Supreme Headquarters Allied Powers Europe
SIGINT	Signals Intelligence
SLAM	Stand-Off Land Attack Missile
SP	Self-propelled
Sqn	Squadron
TACP	Tactical Air Control Parties
TDY	Temporary Duty
TLAM	Tomahawk Land Attack Missile
VJ	Vojska Jugoslavije (Yugoslav Army)
UAV	Unmanned Aerial Vehicle
UCK	Ushtria Clirimtare e Kosoves (Kosovo Liberation Army, KLA)
UK	United Kingdom
UN	United Nations
USAF	United States Air Force
USAFE	United States Air Force in Europe
USMC	United States Marine Corps
USN	United States Navy

INTRODUCTION

The Kosovo dispute has had a long-lasting history between Serbs and Albanians, in many cases during the last 150 years involving the Great Powers or neighbouring countries. In this book, the authors shall not enter the trap of explaining the wider Kosovo (Kosovo and Metohija) dispute which led to the last conflict in Europe in the 20th century. This book will cover the air campaign that was the most characteristic part of the Kosovo conflict in 1998-99. The political and diplomatic background of the conflict and ground operations of the Yugoslav Army and Serbian Ministry of Interior forces will be the subject of titles that may be published in forthcoming years.

This book was written because both authors had their own experiences of the air campaign in 1999. General Draganić was in the front line of the Serbian air defence, while Bojan Dimitrijević was a local opposition politician and historian. The idea of creating a book about Operation Allied Force arose after the mutual exchange of experiences of the conflict which were held between Serbian RV i PVO and USAFE (United States Air Force in Europe) authorities in 2005 in Zemun/Belgrade RV i PVO HQ and Ramstein USAFE HQ. Both of the authors participated in those talks in an official capacity. The materials gathered and important recollections of the key decision-makers among the Yugoslav/Serbian military senior leadership eventually led to this book.

As was the case with Bojan Dimitrijević's previous Helion project, *Deliberate Force: Air War over Bosnia and Herzegovina, 1992–1995*, the centrepiece of this project is the extensive use of original documentation of the RV i PVO, along with several interviews with participants and eyewitnesses. In the course of preparing this project, the authors made extensive use of domestic and foreign documentation and literature. Some of the documentation obtained from diverse Serbian RV i PVO sources is still considered 'classified', but the authors nevertheless incorporated them in this manuscript.

This first volume covers events chronologically from the earliest days of the crisis in autumn 1998 through to the end of Operation Allied Force in mid-June 1999. The forthcoming second volume will cover the experiences of both sides in this aerial war, which are of no less importance than the chronological list of events that occurred during the operation.

The authors have tried to list all the relevant historical details of Operation Allied Force, trying as hard as possible to show no bias. Operation Allied Force (a war, air campaign or just aggression, depending on the point of view) had many parts, and we have tried to outline most of them. Since most of the previous works on the subject focused solely on the experiences of NATO forces, the authors wanted to give as much as possible a holistic view of events and experiences from the viewpoint of both sides. The authors have tried to offer a true chronological order of events for both sides that were engaged in the conflict. In some cases, they do not give any specific comment; instead, they raise questions for which they do not have proper answers.

The authors have striven to ensure that Helion readers can have as complete a picture as possible of the air campaign over the Federal Republic of Yugoslavia in 1999 without portraying any of the sides in black and white, no matter their personal experience of these events.

1

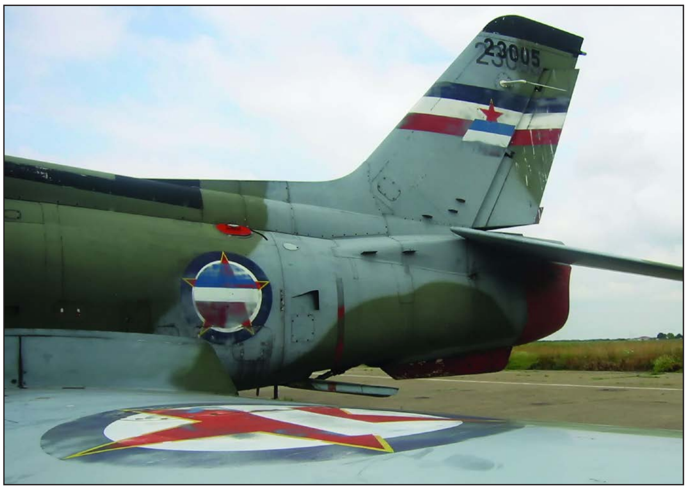
VOJSKA JUGOSLAVIJE AND ITS AIR FORCE: RV i PVO 1992-98

The new Federal Republic of Yugoslavia (FRY), or *Savezna Repubilka Jugoslavija* (SRJ), which was formed on 27 April 1992, consisted of two former Yugoslav republics: Serbia and Montenegro. The army of the new state was named the Vojska Jugoslavije (VJ) and started to be effective from 19 May 1992.[1] It consisted of all assets that remained in the territory of the two republics and parts of the units that were earlier transferred from other former Yugoslav republics. The new Yugoslavia was placed under a UN embargo in late May 1992 after being accused of having a military presence and influence in the war that had spread throughout neighbouring Bosnia and Herzegovina. The embargo included the deploying of UN/EU monitors at each of the FRY air bases. Such monitoring teams controlled all of the country's air force activities up to the end of the war in Bosnia in December 1995. Moreover, in the summer 1992, NATO ships appeared in the South Adriatic, establishing maritime control and an embargo along the Montenegro coastline.

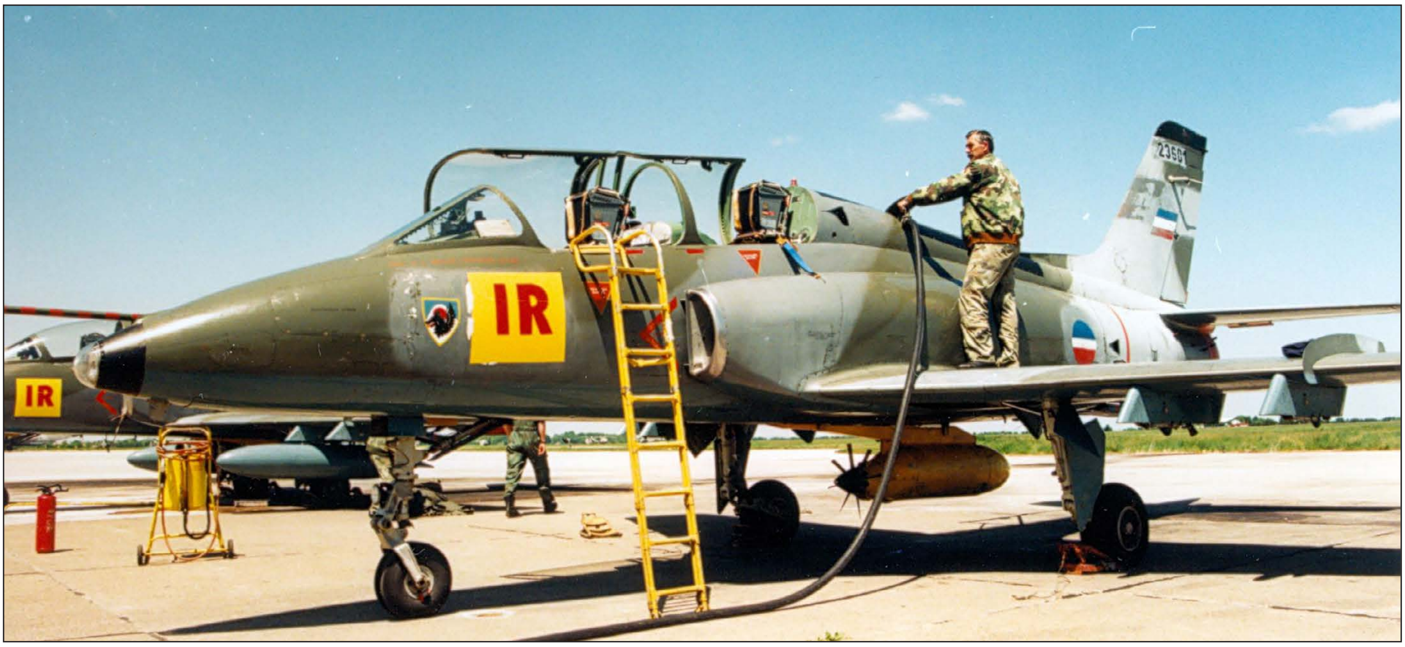
Pre-war Situation Within the Yugoslav RV i PVO

The Yugoslav Air Force, or *Ratno vazduhoplovstvo i protivvazdušna odbrana* (RV i PVO), consisted of units already stationed in Serbia and Montenegro and those which withdrew from the republics that abandoned Socialist Yugoslavia during 1991 and early 1992: Slovenia, Croatia, Bosnia and Herzegovina and Macedonia. From September 1992, the RV i PVO was reorganised into an Air Corps (*Vazduhoplovni korpus*) and Air Defence Corps (*Korpus PVO*). This organisation was actually an improvisation, caused by the unplanned situation of the break-up of Socialist Yugoslavia. Later, in 1994, the structure of the air force was improved. There was also an emerging notion that NATO would carry out an air campaign against FR Yugoslavia.[2]

The end of the war in Bosnia was marked with the signing of a peace accord in Paris in December 1995. Elements of a peace treaty were set up later during several conferences that came up with different conclusions to organise and control the peace process among the former Yugoslav republics and nations. Under a sub-regional agreement signed in June 1996, limitations on quantities of combat effectives were introduced for FR Yugoslavia, Croatia, Bosnia and Herzegovina (including both the Republic of Srpska and the Muslim-Croat Federation).[3] Under this agreement, FR


Second prototype of the G-4 Super Galeb 23005, seen here as a good example of the changed markings. Federal Republic of Yugoslavia roundels and a small flash were painted over the previous Socialist Yugoslavia RV i PVO markings, comprising distinctive red stars originating from two Yugoslav Partisan squadrons that were part of the RAF from 1944-45. So-called 'Pepsi' FRY roundels were introduced in June 1992. (B. Dimitrijević)

According to the regulations of the Dayton Accord, all of the ex-Yugoslav armed forces that had taken part in the Bosnian War were limited in the numbers of offensive weaponry, including aviation. Over 60 airworthy combat RV i PVO aircraft were grounded and sent to the Yugoslav Air Force Museum, as seen here. The others, mostly obsolete types, were scrapped. (B. Dimitrijević)



Upon regulations established by the Dayton Accord, a certain number of RV i PVO aircraft received distinctive fuselage markings with the letters 'IR', indicating that they were tasked for research and development (*Istrazivanje i Razvoj*). Such was the case with the Soko G-4 Super Galebs, which were used as target tugs within the 3rd Detachment of the 252nd Fighter-Bomber Squadron at Batajnica in 1998. This G-4, serialled No. 23601, carries the distinctive badge of the Wolves from the Estuary Squadron. (M. Micevski)

The only NATO member country which maintained purely friendly relations with the FRY/Serbia during the mid-1990s was Greece. Here, a HAF Dassault Mirage 2000B is seen during a visit to the RV i PVO's Batajnica Air Base in May 1997. (B. Dimitrijević)

Yugoslavia was allowed to possess 155 combat aircraft and 53 combat helicopters. All surplus aircraft were to be destroyed, or if remaining on the inventory, were to be visually marked on the fuselage as disarmed/for research ('IR') or for ground training ('GTA'). A fleet of older types and versions was mostly written-off from service, including MiG-21PFM and M/MF fighters and the R reconnaissance version, the light strike Soko Jastreb, Soko Galeb trainers and Soko Kraguj COIN aircraft. These were scrapped at various air bases in front of multinational verification commissions by cutting them up at precisely marked places. A total of 65 different combat aircraft were not destroyed but were sent to the Yugoslav Aeronautical Museum at Belgrade International Airport. There was thus a large but necessary reduction of the massive former Socialist Yugoslavia RV i PVO fleet. This reduction meant that several squadrons were disbanded, with their personnel transferred to other existing units.

The other problem that emerged in 1994 and hampered the RV i PVO daily activities for a further decade was a lack of fuel. The embargo and emerging economic crises in the FRY caused a drastic decline in flying hours per pilot. Until 1992, the usual annual average for the fighter pilots was around 80 flying hours; for the strike pilots around 120 flying hours. Now, fuel was delivered in weekly quotas, usually not reaching over 100 tons per combat squadron. Such practice only enabled up to 100 annual flying hours for all pilots in the squadron. Meanwhile, the number of pilots in the squadrons started to rise to 30 or more. This was due to a number of combat pilots having come from abandoned air bases in the former Yugoslav republics, as well as the annual arrival of groups of young pilots from the Military Air Academy. Usually, throughout the mid and late 1990s, the experienced fighter pilots managed to log 15-30 flying hours, while the younger pilots gathered only between five and 10 flying hours annually. But they had skipped most of the lessons in their combat training, including live gunnery and launching of air-to-air missiles. The aerial gunnery practice for fighter pilots was held in the South Adriatic in September 1996, with use of air-to-air missiles on a range along the Montenegrin coastline. This was their first live practice for many years.[4]

One of the last public appearances of the RV i PVO acrobatic team 'The Flying Stars' (*Leteće zvezde*) was at the Batajnica air show in 1997. All of the team's G-4s would be lost in the blaze that started underground at Golubovci Air Base during Operation Allied Force. (B. Dimitrijević)

Table 1: RV i PVO organisation at the beginning of 1999

Main unit:	Parent units:	Subordinated units	Equipment:	Based at:
General staff VJ	**Sector RV i PVO**	**Deputy CHOD* for RV i PVO**		**Belgrade**
		Sector General Department		Belgrade
		Aviation Department		Belgrade
		Air Defence Department		Belgrade
		Air Surveillance Department		Belgrade
		Air Technical Department		Belgrade
		'Moma Stanojlović' Air Depot		Batajnica
		Aviation Test Centre	Various aircraft	Batajnica
		975th Air Training Centre		Sombor
		RV i PVO Training Centre		Batajnica
RV i PVO HQ		HQ		Zemun
		63rd Parachute Brigade		Niš
		353rd Reconnaissance Squadron	MiG-21R/M IJ-22 Orao	1 Det. at Batajnica HQ and 2–3 Det. at Ladjevci
		677th Transport Squadron	AN-26, AN-2, DO-28, JAK-40	HQ at Niš Det. at Batajnica
		322nd Communications Battalion		Novi Sad
		333rd Engineer Battalion		Pančevo
		Air Medical Institute		Zemun
		99th MP Company		Zemun
		Counterintelligence Group		Zemun
		684th Auto. Company (non-active)		
Air Defence Corps		HQ		Belgrade-Batanjica
	83rd Fighter Regiment	123rd Fighter Sqn 124th Fighter Sqn	MiG-21bis/UM	Priština

Table 1: RV i PVO organisation at the beginning of 1999 (continued)

	204th Fighter Regiment	126th Fighter Sqn 127th Fighter Sqn	MiG-21bis/UM MiG-29/UM	Batajnica
	250th Missile Air Defence Brigade	1 – 8 Missile Bns 1 – 2 Missile Tech. Bns	Neva	HQ Belgrade-Banjica. Missile Bns at Batajnica, Jakovo, Pančevo, Zuce Smederevo, Mladenovac and Obrenovac Missile-technical Bns at Sremčica and Zuce
	450th Missile AD Regiment	1 – 4 Missile Bn 1 Missile Tech. Bn	Neva	HQ Kraljevo
	60th SP Missile AD Regiment	1 – 4 SP Missile Batteries	Kub-M	Danilovgrad
	230th SP Missile AD Regiment	1 – 4 SP Missile Batteries	Kub-M	Niš
	240th SP Missile AD Regiment	1 – 4 SP Missile Batteries	Kub-M	Novi Sad
	310th SP Missile AD Regiment	1 – 4 SP Missile Batteries	Kub-M	Kragujevac
	311th SP Missile AD Regiment	1 – 4 SP Missile Batteries	Kub-M	Priština
	126th Air Surveillance Brigade	HQ 20th AS Battalion 31st AS Battalion 58th AS Battalion Air Technical and Maintenance Bn	P-12, P-14, PRV-11, AN/TPS-63, AN/TPS-70, S-600	Belgrade-Banjica Stari Banovci Ladjevci Podgorica Banjica
		210th Communications Battalion		Belgrade-Banjica
		359th Engineer Battalion		Lađevci
		280th ELINT Centre		'13 May' Farm at Zemun polje
		376th Auto. Company (non-active)		
Air Corps		HQ		Topčider-Belgrade
	172nd Aviation Brigade	229th FB Sqn 239th FB Sqn 242nd FB Sqn 251st FB Sqn 784th ASW Hel. Sqn 897th Mix Hel. Sqn	G-4 Galeb G-4 Galeb G-4 Galeb Galeb, Utva-75 KA-25, KA-28 and Mi-14PL Mi-8, SA-341/2 Gazelle	Golubovci near Podgorica 3/251st Sqn based at Kovin, with Utva-75
	98th FB Aviation Regiment	241st FB Sqn 252nd FB Sqn	J-22 G-4 Galeb	Ladjevci and HQ Batajnica
	119th Helicopter Regiment	712th AT Hel. Sqn 714th AT Hel. Sqn 787th Tra Hel. Sqn	SA-341/2 GAMA SA-341/2 GAMA Mi-8	HQs at Niš, 714th AT Hel. Sqn at Ladjevci
	161st Air Base	161st Light AAA Defence Battalion		Niš
	177th Air Base	177th Light AAA Defence Regt. 72nd Air Support Company (Kovin)		Batajnica

Table 1: RV i PVO organisation at the beginning of 1999 (continued)

	285th Air Base	285th Light AAA Defence Battalion Non-active: 85th Light AAA Defence Battalion (to be deployed at Sjenica Air Base)		Ladjevci
	423rd Air Base	423rd Light AAA Defence Regt Non-active: 71st Light AAA Defence and 71st Air Support Battalion (both to be deployed at Nikšic airfield)		Golubovci
	492nd Air Base	492nd Light AAA Defence Regt		Priština
	65th Air Support Battalion	Non-active: 85th Air Support Battalion (to be deployed at Sjenica Air Base)		Ponikve
		643rd Auto. Company (non-active)		

* CHOD: Deputy Chief of the General Staff for the Air Force and Air Defence/RV i PVO.

NATO Contingents Remaining at Italian Air Bases After Deliberate Force

After the Bosnian War ceased in late 1995, and under the Dayton Accord, the NATO-led Implementation Force (IFOR) and later Stabilisation Force (SFOR) were deployed in Bosnia. The role of the dedicated NATO air contingents based in Italy slowly declined as the peace process continued. But in the period between 1996 and 1999, 10 of the NATO air forces retained their contingents in Italy, most of them at Aviano. The USAF's 4190th (Provisional) Wing was established around the 31st Fighter Wing at Aviano, to control all of these Allied air assets. General Charles Wald took command of this unit. In Tuzla, the 401st Expeditionary Air Base Group was formed at Tuzla Air Base to support the IFOR/SFOR deployment, and remained central to US military operations in Bosnia in this period. Occasional visits by US Navy aircraft carriers also added to the potency of NATO contingents which carried out mostly CAP missions over the Balkans. During the deployment of the IFOR forces, those flights were part of Operation Decisive Edge (1996), later to be transitioned into Operation Deliberate Guard, which supported SFOR forces between 1997 and 1999.[5]

During both missions, NATO forces closely monitored the activities of the Yugoslav RV i PVO. Meanwhile, the RV i PVO continued to use their ELINT and air surveillance units to monitor the activities of the NATO forces.[6] NATO forces were mostly improving their knowledge of the procedures and approach in planning and carrying out missions over the Balkans. Still, until February 1998, there would be no sign of belligerence by any side in the Balkans.

October 1998 Crisis

Unresolved political and national problems in the southern Serbian province of Kosovo and Metohija had been boiling under the surface since the start of the 1990s. In early 1998, this hidden crisis turned into open clashes. The Albanian national movement led by the younger generation of leaders, mostly born in the late 1960s, abandoned the idea of struggling for a separate republic within Yugoslavia or Serbia, which was earlier the primary goal of the Kosovar communist leadership and elites. They started with guerrilla actions, organised through the Kosovo Liberation Army (KLA; or Ushtria Clirimtare e Kosoves, UCK). Soon, during the spring of 1998, individual armed actions turned into a wider movement which managed to seize control over portions of Kosovo and Metohija. This was the spur for Yugoslav Army units to be deployed from their garrisons in Kosovo cities and to assist Serbian police units in managing the crisis (or mutiny, depending on the point of view).7

At this point of the conflict, the RV i PVO engaged the 119th Helicopter Regiment with its Mi-8 and Gazelle helicopters for transport, liaison MEDIEVAC and other similar duties. They operated upon the orders of the Prištinski Corps or Third Army HQ, which had Kosovo and Metohija within their area of responsibility. Serbian State Security (*Resor državne bezbednosti*, RDB) also used two Mi-24s and two Mi-17s in support operations with their Special Purpose Unit. These missions were already dangerous, since the Albanian guerrillas would not hesitate to open fire upon helicopters flying low-level sorties. In one such mission, one of the RDB Mi-24s was hit by ground fire, after which Serbian State Security ceased to use their helicopters over Kosovo.

Widespread clashes in the summer of the 1998, and massive use of FRY/Serbian security forces, caused a reaction from the international community. Again, as in Bosnian War, terms like 'ethnic cleansing', 'aggression', 'violence' and 'humanitarian disaster' started to appear in Western media reports. NATO stood up against such massive use of power against the UCK guerrillas and the civilian population. Assistant US Secretary of State Robert Gelbard made a critical point when he stated that the United States, from a legal perspective, did not perceive UCK as terrorists, but as a rebel group. However, he did remark that Serb security forces had carried out 'terrorist' acts. It was a clear sign in which way events may proceed. War thus seemed to be unavoidable.

In 1997, Serbian State Security (RDB) obtained two Mi-17s and two Mi-24s from Ukraine through illegal channels. They were used to support the RDB's Special Purpose Unit in Kosovo during 1998. However, their usage was not a success, and they were not used during combat actions in 1999. In 2006, they were passed to the RV i PVO. (B. Dimitrijević)

Political and media pressure was increased, with a growing military presence of NATO air assets in bases in Italy. They started to carry out several air exercises over the Balkans to warn the FRY regime. One of these exercises was Determined Falcon, held in mid-June 1998. Lieutenant General Mike Short, commander of NATO air forces in Southern Europe, said that he hoped this operation "would leave no doubt in Serbia's mind about NATO's ability to use air power to bring about a specific result." A total of 84 aircraft from 13 NATO air forces were involved in the exercise, that took over Albanian and Macedonian air space, in many cases along the border of Kosovo – actually FRY air space.[8]

Short clearly warned the Serbs:

> I don't think there's any doubt in the Serbs' mind about our ability to use airpower. They were clearly witnessing in August and September 1995 our selective and precise airpower to bring about a specific result; it's important that anyone who would see themselves as potential adversaries of the NATO alliance that they see we were a very fine air-force in '95 – in '98 we're so much better both as individual air forces and under collective alliance. We have a great deal more capability today than we had in '95 and because of our practice over the skies of Bosnia for the last two-and-a-half years, we are much more capable of acting as an alliance – as we're demonstrating today … So, again any potential adversaries should understand that we were good in '95 – we're a whole lot better now."[9]

Planning of the air campaign against the FR Yugoslavia started in May 1998,[10] but after the UN Security Council adopted resolution No. 1199 on 23 September 1998, preparations became more intense. The resolution "demanded that all parties cease hostilities and maintain a ceasefire". Both the FR Yugoslavian government and the Kosovo Albanian leadership were urged to take immediate steps to improve the humanitarian situation and begin talks to resolve the crisis. The Council then demanded that the Federal Republic of Yugoslavia "end action by security forces that affected the civilian population; allow the presence of international monitors and guarantee their freedom of movement … [and] make rapid progress towards finding a political solution to the situation in Kosovo." Meanwhile, the Kosovo Albanian leadership had to condemn terrorism.[11] At a meeting of NATO ministers of defence in Villa Mura in Portugal on the following day, 24 September, an 'Activation Order' (ACTORD) was approved for two air operations: a 'Phased Air Operation' and a 'Limited Air Response'. In 1999, the latter operation was integrated into the former.

Meanwhile, the FRY Supreme Defence Council held a session on 4 October 1998. The council consisted of three presidents – those of the FRY, Serbia and Montenegro – plus federal prime and defence ministers. They felt that after UN Security Council resolution No. 1199, the FRY was in a difficult situation, with the possibility of imminent air attack if the requests of the international community regarding Kosovo and Metohija were not fulfilled.

The Yugoslav Army (VJ) General Staff estimated that larger-scale NATO air attacks might occur around 16 October, while lesser attacks could happen at any given time. They said: "NATO's aim was military and political." The Yugoslav General Staff already had information that two groups of targets had been selected: Kosovo province and above the 44th parallel. Other estimations included that after an initial air attack, a longer war with deployment of ground forces could be expected, relying on guerrilla UCK and NATO-led SFOR forces that were already in the region. Chief of the VJ General Staff, General Perišić, informed the highest FRY political authorities that there were insufficient resources for a longer war. He urged that either all diplomatic efforts should be used to prevent the air campaign, or a state of war should be declared at once, which would enable immediate defensive preparations to be made. The only one with a different opinion, stating that war with NATO should be avoided at all costs, was Montenegrin President Milo Djukanović. He believed that all diplomatic efforts should be used to convince the international community that all requests in resolution 1199 concerning Kosovo would be fulfilled. Djukanović asked FRY President Slobodan Milošević – who was seen internationally as the leading FRY/Serb figure – to announce that the FRY would start negotiations with local Albanians on a political solution to the problem.

General Perišić warned other members of the Supreme Defence Council about the fighting morale of their forces; the problems of FRY defence industries fulfilling the needs of the VJ if the campaign turned into a full-scale war; and the lack of any allies for the FRY/Serbia. He also asked what the retaliation response might be. Perišić estimated that it would be difficult to stop troops from attacking local Albanians if they could not harm NATO forces, which would be attacking from a distance. He thus urged that it was better to accept the political conditions "now and without losses" than after the war.[12]

President Milošević replied without answering any of the problems raised. He spoke in broader terms that all requests by the UN Security Council were fulfilled and that military operations in Kosovo province be ceased. Milošević debated on when and how to proclaim a state of war, and entered into a quarrel with Djukanović, after which he stood up and left the room.[13] An official statement from this meeting did not improve matters: "Yugoslavia is firmly devoted to peace and it is ready to solve all open questions peacefully. But if we should be attacked, we shall defend the country with all means." Similar statements were repeated the next day in the Federal Parliament: dialogue with the Albanians was necessary, but the country would never give up part of its territory.[14]

A week later, US shuttle diplomat Richard Holbrooke arrived in Belgrade with Lieutenant General Short to meet President Milošević and try to negotiate a peaceful solution to the sudden crisis. Holbrooke warned the Yugoslav president that if he failed to comply with the UN resolution, he risked NATO air strikes. However, negotiations between the two sides stalled.

Deployed NATO air assets based in Italy were expecting a signal to start the air campaign against the FR Yugoslavia, which duly came on 13 October. NATO approved the launching of the aerial campaign against Yugoslavia by giving the ACTORD for initial air attacks to start in 96 hours. It was a firm sign to Milošević that NATO was prepared to act at once, as Supreme Allied Commander Europe (SACEUR) General Wesley Clark later confirmed.[15]

Deployment of NATO Forces in the Theatre

Alongside the diplomatic negotiations, both sides started preparations for war in early October. Upon UN Resolution 1199 being declared, NATO activated Operation Determined Force with the intention of limited air strikes and a phased air campaign. It was the sign for a rapid and large mobilisation of NATO air contingents, which would rise to 420 aircraft during the October 1998 crisis.

The bulk of the USAF forces were those belonging to the USAFE based all over Europe. Its HQ at Ramstein Air Base had two numbered air forces at its disposal:

3rd Air Force, HQ at RAF Mildenhall, UK, which controlled:

- 48th Fighter Wing at RAF Lakenheath, UK (492nd and 494th FS with F-15Es and 493rd FS with F-15Cs)
- 52nd Fighter Wing at Spangdahlem Air Base, Germany (22nd and 23rd FS with F-16CJs[16] and 81st FS with A-10s)
- 86th Airlift Wing at Ramstein Air Base, Germany (37th AS with C-130Es, 75th AS with C-9As, 76th AS with C-20s and C-21As, all three at Ramstein and 7005th ABS with C-21As at Echterdingen Air Base, Germany)
- 100th Air Refuelling Wing at RAF Mildenhall, UK (351st ARS with KC-135Rs[17])

16th Air Force with its HQ at Aviano Air Base, Italy, which controlled:

- 31st Fighter Wing at Aviano Air Base, Italy (510th and 555th FS with F-16CGs)[18]
- 39th Air and Space Expeditionary Wing at Incirlik Air Base, Turkey, with no aircraft assigned.[19]

During the October 1998 crisis, a new 'expeditionary' organisation of the USAF was adopted and tested. The new concept of Expeditionary Aerospace Force was launched on 4 August by the highest US Air Force officials. The new system of organisation was developed on the basis of the Gulf War and Balkan air operations from 1991-98. It was intended to manage the USAF air assets overstretched in different air operations and deployments worldwide. The concept assumed that 10 Air Expeditionary Forces would have different units rotated in combat readiness to be used outside of

One of the F-15C Eagles belonging to the 493rd Fighter Squadron of the 48th Fighter Wing, based at RAF Lakenheath, seen here taking off during the so-called October Crisis on 12 October 1998. (US DoD)

During the October 1998 crisis, the RV i PVO commander, Colonel General Ljubiša Veličković, inspected many of his units. Here, he is seen with personnel of the 252nd Fighter-Bomber Squadron, below the port wing of a J-22 Orao. Soon after the crisis was resolved, he resigned from his post in protest that NATO was allowed to carry out reconnaissance missions inside FRY air space. (M.D. Ristić)

the Continental United States (CONUS) if needed.

The USAFE tested this new concept during Operation Joint Guard in 1997, when two expeditionary wings were created around the 16th and 31st Wings, with temporary assigned air assets. During October 1998, four 'Air Expeditionary Wings (Serbia)' were established: the 16th, 31st, 86th and 100th AEW. They would all receive additional reinforcements during the crisis, finishing with some 250 aircraft.[20] In 1999, more AEWs would be created to control the massive number of US aircraft deployed from CONUS. Beside the wings, the squadrons also adopted the 'expeditionary' structure. For example, a single peacetime CONUS USAF Wing would organise among all of its assets one or two such 'expeditionary' squadrons and send them to Europe, where they would join already established AEWs.

Operation Determined Force officially started on 13 October. During the operation, the following USAF forces were deployed. On 11 October, six B-52Hs from 2nd BW arrived at RAF Fairford. Two B-2A Spirit stealth bombers of 509th BW were prepared and remained on alert in their home base, Whiteman AFB, Montana, as well as 12 F-117A Nighthawks of 49th FW at Holloman AFB, New Mexico. It was planned that F-117As would arrive at Aviano Air Base in Italy. The 493rd Fighter Squadron that had already arrived from Lakenheath to Aviano, with its F-15Cs, was moved further to Cervia to enable the accommodation of F-117A stealth fighters. The aircraft carrier USS *Dwight D. Eisenhower* (CVN-69) was also in theatre, on alert.[21]

Furthermore, NATO allies deployed contingents during Operation Determined Force. For example, the UK's Royal Air Force strengthened its detachment in Gioia del Colle on 4 and 5 October, with Harrier GR.7s from Nos 3 and 4 Squadrons based at RAF Cottesmore, Rutland. Parts of the Tornado squadrons at Laarbruch, Germany, were also activated.[22]

The Turkish Air Force sent four of its F-16Cs to Italy on 8 October, while the following day, the Belgian Air Force deployed six of their F-16As to join four already deployed F-16s. On the same day, four F/A-18s and a single tanker belonging to the Spanish Air Force arrived at Aviano. The RCAF (Royal Canadian Air Force) had earlier deployed six Canadian F/A-18s to Aviano, and now sent a reinforcement of the same aircraft on 9 October. Meanwhile, the Portuguese Air Force sent three F-16As and a single C-130 to Aviano.

The French Armée de l' Air (ALA) deployed on 13 October to Istrana Air Base a large contingent, comprised of Mirage 2000C fighters (belonging to 1/12 and 1/5 escadrilles), Mirage 2000D (3/3 escadrille) and Jaguar A (3/7 escadrille) strikers, and a single ELINT C-160G Gabriel (from EE1/54). Other strategic assets such as C-135FR tankers, E-3F AWACS (Airborne Warning and Control System) and Mirage IVRP strategic reconnaissance platforms were on alert in their home bases in France. The French Navy aircraft carrier *Foch* entered the Adriatic carrying total of 34 aircraft belonging to Nos 6, 12 and 16 Flotilles (Etandard IVs, Super Etandards, Alizes and various helicopters).[23]

The Dutch RNLAF deployed a total of 16 F-16As from Nos 322 and 323 Squadrons to Villafranca Air Base. Eight of these arrived on 13 October, while the remaining eight had been deployed earlier.

The German Luftwaffe deployed a batch of Tornados from JbG 32 to Piacenza on 13 October. Finally, a batch of six Royal Norwegian Air Force F-16As belonging to the 338th Squadron arrived at Grazianese Air Base on 17 October.

RV i PVO Forces Prepare for Defence

As the tension grew during the first half of October 1998, Yugoslav (Serb) forces were activated. Within the RV i PVO, some units had already started preparations in August, including missile units of the 250th Missile Air Defence Brigade around Belgrade. Initial orders for increased combat readiness were issued on 27 September. These included an order for the dispersion of weaponry and equipment out of static buildings and barracks. The first order by the General Staff was issued on 2 October. On 5 October, a meeting with all of the RV i PVO commanders was held at Batajnica Air Base. From the night of 8-9 October, NATO air attacks began to be expected on every following night.

The main RV i PVO air surveillance unit – the 126th Air Surveillance Brigade with its three battalions – was activated on 2 October. On that day, these units abandoned their peacetime locations. Nine radar units (three independent platoons and six radar companies) took up either 'basic' or 'reserve' radar positions, while 10 other radar units remained 'in expected areas', with their radars on trailers or vehicles. Reserve personnel were partly activated and reserve materiel moved out of storage.[24]

The main missile air defence unit of the RV i PVO, the 250th Missile Brigade, was deployed around Belgrade. However, it could not activate all of its formations immediately. It had activated five (out of eight) missile battalions (Nos 1, 3, 6, 7 and 8) and one (out of two) of its missile-technical battalions (No. 2). All of the units had only one shift of personnel at their disposal. At the moment, the 250th Brigade could only move at the same time two missile and one missile-technical battalions using vehicles from other units of the brigade. Two MANPADS missile batteries equipped with 9K38Ms

In autumn 1997, almost all remaining J-22 and two-seater NJ-22 Oraos were gathered as part of the 98th Fighter-Bomber Aviation Regiment. This operated the 241st FB Squadron at Ladjevci and 252nd FB Squadron at Batajnica. Here is 25207, one of the last couple of examples that were finished in the Soko Mostar factory in mid-1992 but assembled at Batajnica Air Base in June that year, after the withdrawal of the RV i PVO from Bosnia and Herzegovina the previous month. (M. Micevski)

(SA-18 Grouse) had a single platoon activated. A missile battalion with obsolete S-75 Dvinas (SA-2 Guideline) was also activated and located in firing positions manned with mostly elderly or retired personnel. Three 'non-active' missile battalions (Nos. 2, 4 and 5) had to be mobilised and further trained. It was estimated that 90 percent of deployed equipment was fully operational, despite a lack of spare parts for vehicles or batteries.

The other air defence missile units – five regiments with Kub-Ms (SA-6 Gainful) and one with Nevas (SA-3 Goa) – were also deployed when possible. In total, 16 missile units (nine Neva battalions and seven Kub batteries) were activated, which was around 50 percent of the RV i PVO's missile capability. During this period, 13 dummy firing positions were also built.

On 9 October, the communications system in the RV i PVO started to operate in war conditions, in cooperation with the state enterprise Telecom Srbija. It was estimated that NATO ELINT operations were not intensive, but most of the communications were transferred from wireless and cellular systems to a static telephone network.[25]

Two of the RV i PVO's fighter regiments were also activated. A few MiG-29s belonging to the 127th Fighter Squadron *Vitezovi* (or 'Knights') were deployed to Niš Air Base. Others were parked in HAS (Hardened Aircraft Shelters) all over Batajnica Air Base. It was believed that these shelters could sustain the initial NATO attacks. At Priština, MiG-21s of the 83rd Fighter Regiment were taken inside the underground Rudnik complex at Priština Air Base, while other aircraft were deployed around the aprons and taxiways.[26]

RV i PVO strike aviation was also deployed according to the expected situation. The J-22 Orao-equipped 252nd Fighter-Bomber Squadron was deployed from Batajnica to Ponikve Air Base to be close to its potential UCK targets in Kosovo.[27]

A serious problem for RV i PVO fighter aviation at this time was airworthiness. Average airworthiness during 1998 was just 55 percent for MiG-21bis, 43 percent for MiG-29s and 30 percent for MiG-21UM two-seaters. Moreover, average flying hours for MiG-29 pilots was only 16.30 per year, while MiG-21 pilots on average had 25 flying hours. Older pilots had fired K-13 (AA-2) and R-60 (AA-8) AA missiles during the year, and some of the pilots of the 127th Squadron carried out familiarisation sorties from Priština Air Base, along with air base manoeuvres to Podgorica, Niš and Ladjevci air bases.[28] The 127th Squadron was the spearhead of the RV i PVO, manned mostly by senior pilots, aged 35-40, most of them with the rank of major (RAF equivalent to squadron leader), equipped with the most modern types in the air force.

In the 83rd Regiment at Priština, a few months earlier, pilots started to fly with their side arms, as a precaution in case they were brought down by ground fire from Albanian guerrillas. Security around the aprons and ramps at Priština Air Base were reinforced by the placing of armed guards. In the 83rd Regiment, flying was intensified during 1998, with even some of the younger pilots managing to log up to 30 flying hours that year. Daily flying was organised, no matter whether the particular day was regarded as a 'technical' or 'reserve' flying day. During the intensive flying in this period, the regiment lost three MiG-21s, but there were no fatalities.[29]

The Crisis Comes to a Temporary End: Arrival of the Kosovo Verification Mission

This sudden political crisis was resolved when President Milošević came to an accord with US envoy Richard Holbrooke on 13 October, the first day of Operation Determined Force.

The ACTORD for NATO air strikes was suspended, but not cancelled (as ambassador Holbrooke reported to NATO on 27 October).

It was agreed that a Kosovo Verification Mission (KVM), headed by former US diplomat and allegedly CIA official William Walker, should start to deploy to Kosovo and Metohija province. On 24 October, the UN Security Council passed resolution 1203, which endorsed the verification missions. The KVM's task was to monitor the situation on the ground and to note any clashes or violation of the Milošević – Holbrooke agreement. It was agreed that NATO should carry out reconnaissance flights to monitor the situation in the province. The crisis thus started to calm down, despite occasional clashes continuing all over Kosovo between guerrillas and Yugoslav/Serbian forces.

Although everyone was sceptical about the effectiveness of the agreement, both sides started to downsize their combat assets. The RV i PVO HQ ordered all of its units to return to regular activities from 14 October, While USAF B-52 bombers and surplus KC-135 tankers returned to the United States.[30] Later, between 31 October and 24 November, all of the relocated equipment and weaponry belonging to the RV i PVO was returned to its bases, barracks or

Sixteen MiG-29s were the most modern airframes among the RV i PVO fighter aviation, being part of the 127th Fighter Squadron in Batajnica since late 1987. Here, the MiG serialled 18113 passes a P-18 radar position heading for a training sortie in the mid-1990s. (M. Micevski)

storage areas. The events of October 1998 were later described as "the biggest strain" on the Yugoslav Air Force in its "recent history."[31]

General Clark was in Belgrade three times during the second half of October, negotiating for the VJ and MUP Srbije (Serb Ministry of Interior) forces which were deployed from their barracks in Kosovo to be seriously downsized. It was eventually agreed that only three VJ companies should be allowed to operate out of their barracks.[32]

Monitor teams were exchanged between the RV i PVO HQ in Zemun and NATO's Combined Air Operations Centre (CAOC) in Vicenza.[33] At the Priština Air Base, the KVM established their monitor team, which controlled the activities of the MiG-21-equipped 83rd Fighter Regiment.

On 30 October, NATO's North Atlantic Council formally approved the air operation to verify the Milošević – Holbrooke agreement: Operation Eagle Eye.[34] Indeed, the first reconnaissance missions had been undertaken on 16 October. The main participants in this mission were reconnaissance veterans, the Lockheed U-2Ss of the USAF 99th ERS which operated from Aviano. The RQ-1A Predator UAVs (Unmanned Aerial Vehicles) were soon introduced, and during the course of the winter they almost completely replaced the U-2s. The Predators belonged to the USAF 11th ERS, which operated from Taszar Air Base in Hungary. Later, other aerial reconnaissance platforms from NATO joined Eagle Eye: RAF Canberra PR.9s from Gioia del Cole, ALA Mirage IVPs from Mont de Marsan (BA 118) Air Base and naval reconnaissance platforms such as US Navy P-3C Orions and French Navy Atlantic 2s from Sigonella NAS on Sicily.[35]

The RV i PVO's fighter aviation was not allowed to be airborne when NATO (USAF) reconnaissance flights were carried out over Kosovo. RV i PVO combat aviation was banned from operating over Kosovo and Metohija, and even 25km inside Serbia proper, when NATO reconnaissance aircraft flew over the province. Non-combat aircraft and helicopters were not part of any limitation. It was agreed that there would be no mutual ECM (Electronic Countermeasures), but that surveillance radar could be used without limitations.

On the day that air monitoring over Kosovo started, Captain Roberto della Croce was on a training flight with one of the younger RV i PVO pilots. As they started to descend through clouds, della Croce noticed a large shadow passing over his cockpit. He later recalled: "I looked above and realised that some 200 metres above was a Predator UAV. I would gladly [have] burst it away with my afterburner. But except for showing it the middle finger nothing was allowed to be done. I hope that they managed to photograph it. We carried on with our business."[36]

One important outcome of the October crisis was a number of sudden top personnel changes in the FRY/Serbian military and state security service. As an act of protest against NATO aircraft being allowed to enter FRY airspace and that NATO observers would arrive at RV i PVO HQ in Zemun, the commander of the RV i PVO, Colonel General Ljubiša Veličković, decided to resign from his post on 19 October. President Milošević – who liked Veličković as one of his countrymen – decided rather than retiring him to post him as Assistant Minister of Defence. In place of Veličković, the publicly less-known General Spasoje Smiljanić became the new RV i PVO commander.

Meanwhile, the chief of the VJ General Staff, Colonel General Momčilo Perišić and chief of the Serbian State Security, Jovica Stanišić, tried during the October crisis to convince Milošević to accept the international arbitration and avoid going to war with NATO. Milošević thereafter decided to remove them both from their important positions. The media in Belgrade soon accused both of them of siding with the Americans, and even with CIA. To replace the pair, during December Milošević chose or promoted more hardliners ("who enjoyed the trust of the Supreme Command," as explained in *Vojska* magazine) whom he could rely upon in the forthcoming conflict with NATO.[37]

2

TOWARDS WAR: PREPARATIONS OF BOTH SIDES IN EARLY 1999

From Trigger Event to Failed Negotiations

By the beginning of 1999, the situation regarding Kosovo in the international political arena had failed to reach a peaceful solution. Gradually, it seemed inevitable that war would be the outcome. UCK forces attacked Yugoslav Army troops on several occasions and inflicted casualties. MUP Srbije forces also attacked the UCK guerrillas. The presence of the Kosovo Verification Mission was regarded by minor VJ officials and Serbs in Kosovo as serious support for UCK guerrillas and the Albanian political cause. Some senior Albanian guerrilla commanders later explained that they intended to use the KVM's presence as a pretext for NATO to start its aerial campaign. The appearance of the KVM on the ground sometimes came close – despite the mission's denial – to providing assistance for UCK guerrillas in the form of liaison, surveillance or intelligence activities against VJ and MUP Srbije forces.[1]

Then came 'the Račak incident'. On 15 January 1999, Serbian MUP forces clashed with UCK guerrillas in their village stronghold of Račak in the wider area of Uroševac. Coming under fire from UCK reinforcements from a neighbouring village, Serbian police withdrew, leaving behind dead UCK fighters. On the next day, the KVM and its head, William Walker, arrived on the scene and accused the Serbs of massacring 40 civilian Albanian villagers. Consequently, Walker was pronounced *persona non grata* in Serbia on 18 January and had to abandon its territory. Regardless of Serb denials and Albanian accusations, there was now a possible 'trigger event' for war: an alleged massacre. Waves of accusations followed against the Serbs in the Western media, describing an incident closely resembling the earlier ethnic violence in Bosnia.[2]

But as Supreme Allied Commander Europe General Wesley Clark explained, despite the existence of ACTORD, no one among the European allies was ready to start an aerial campaign. Members of the KVM on the ground were easy prey for Serb security forces. Clark, accompanied by General Klaus Naumann – chairman of the NATO Military Committee – arrived in Belgrade and tried to negotiate with Milošević regarding further investigations and the return of Walker to Kosovo. However, the talks turned into a sharp quarrel. Clark writes that Milošević looked on indifferently while the two NATO generals were leaving his quarters.[3]

After the 'Račak incident', VJ officials noted that activities of NATO air contingents from Italian air bases intensified, that NATO forces deployed in Macedonia developed a plan for the KVM's evacuation, and that UCK guerrillas were more active than ever before in Kosovo and north-eastern Albania. Meanwhile, the Allies felt sure the incident would trigger the start of NATO's aerial campaign within a matter of weeks.

The next step prior to the launching of the NATO air campaign was talks between FRY representatives and ethnic Kosovar Albanians, organised upon the insistence of the international community (largely NATO). The talks were held in the Chateau de Rambouillet in France, some 50km north of Paris. A document was presented for both sides to sign, an 'Interim Agreement for Peace and Self-Government' in Kosovo. Actually, it was an ultimatum for Yugoslavia, the international representatives demanding something that Belgrade was certain not to fulfil. Unsurprisingly, the FRY government's rejection was based on the argument that the agreement contained provisions for Kosovo's autonomy that went further than what the Serbian and Yugoslav governments saw as reasonable. Nevertheless, NATO imposed an ultimatum for Belgrade to accept the agreement by 19 February and offered one month for further negotiations. Eventually, on 18 March, the Albanian, American and British delegation signed what became known as the 'Rambouillet Accords', while the Serbian and Russian delegations refused. The accords called for NATO's administration of Kosovo as an autonomous province within Yugoslavia; a force of 30,000 NATO troops to maintain order in Kosovo; an unhindered right of passage for NATO troops on Yugoslav territory, including Kosovo; and immunity for NATO and its agents to Yugoslav law. According to historian Tim Judah, the Serbian side later used Annex B of the accords as a reason for the failure of talks, the Serbs rejecting any discussion of the involvement of foreign troops.[4]

The February talks in Rambouillet led to some expectations in the VJ General Staff that conflict may be avoided. Indeed, the fact that no additional contingents were deployed to the region – along with public opinion around the world against any conflict – seemed to assure the VJ Intelligence Department that NATO attacks could be avoided. By mid-March, such an optimistic view had changed, mainly for two reasons: Richard Holbrooke's involvement in the talks and the creation of the NATO's Rapid Reaction Force in Macedonia, with British General Mike Jackson at its head. A further sign that trouble was approaching fast was the appearance of F-117A stealth fighters in the region and an increase of activities registered by the RV i PVO 280th ELINT Centre.[5]

During March, several talks between General Clark and the new VJ Chief of Staff, General Dragoljub Ojdanić, were held in Belgrade or via the telephone, but without any improvement in the situation. Clark used the opportunity to convince Yugoslav Army leaders that the presence of international forces was necessary for a peaceful outcome of the Kosovo crisis, while also commenting on the presence of extra VJ forces in southern Serbia on the border with Kosovo.[6] The fact that intensive communications were being held and that the aircraft carrier USS *Enterprise* (CVN-65) left for the Persian Gulf caused the Yugoslav military intelligence to conclude "that this is a positive indicator of the actual situation." The belief that negotiations would lessen the possible escalation of war with NATO remained: it was to last until the failure of the next round of diplomatic talks held in Paris between 15 and 19 March 1999.[7]

RV i PVO Operational Plans Against NATO Air Attacks

According to minutes from the VJ General Staff collegiums held in mid and late January and early February 1999, there were two general plans for an eventual clash with NATO, named 'Thunder 1' and 'Thunder 2' (*Grom* 1 and 2), while a third plan ('Thunder 3') was also developed with the intention of stopping NATO forces attacking or advancing from Macedonia.

The main dilemma for the Yugoslav military decision-makers was the scope of NATO air strikes. The VJ General Staff believed that they would be limited only to targets in Kosovo and Metohija province, while the RV i PVO HQ estimated that the attacks would include the whole territory of FR Yugoslavia.

Starting on 20 January 1999, the RV i PVO senior leadership started to plan defensive operations. The Yugoslavs/Serbs developed two plans, '*Operacija PVO*' (Operation Air Defence) and '*PVO objekata*' (Air Defence of the Objects).[8] By the start of the campaign, similarly to what happened with NATO, the plans started to merge into a single process, thus losing the framework of imagined separate operations.

Operacija PVO was intended to defend forces and buildings in the 'Zone of operation' (i.e. Kosovo) and prevent NATO aviation from reaching and attacking Belgrade and the surrounding area. Such operations would engage the 83rd Regiment with both squadrons and five MiG-29s.

The Yugoslavian missile air defence assets were much more potent than their fighter aviation. These included the 450th Missile Air Defence Regiment (*Kraljevske lisice*, 'The Royal Foxes') at Kraljevo equipped with the Neva system (SA-3), plus three self-propelled air defence regiments equipped with Kub-M (SA-6): Nos 230 at Niš, 310 at Kragujevac and 311 at Priština. A total of four Neva and 12 Kub missile batteries had already left their peacetime positions and were deployed in the expectation of air strikes.

Air surveillance relied on eight radar sub-units (companies or independent platoons): the 31st Air Surveillance Battalion had six units in the mountains at Kopaonik, Zlatibor, Goleš, Vidojevica and Jadovnik and one at the Stari Trg mine in Kosovo, while the 20th Air Surveillance Battalion had two companies in the mountains at Golija and Kitka. Only one unit at Mount Kopaonik remained in the 'basic radar network' or peacetime position; the others created a 'reserve radar network'. The radar units at Jadovnik, Zlatibor, Golija and Kitka formed a 'basic radar network', while three other units at Stari Trg, Goleš and Vidojevica remained in reserve, waiting to deploy wherever necessary.

Command of Operacija PVO was organised at the 31st Sector Operations Centre (OCS) in Kraljevo. All units were linked to this centre, although it turned out that the 31st OCS did not have the autonomy to command and use the deployed units. The Air Defence Corps was actually responsible for allowing the use or deployment of the missile and air surveillance units. Moreover, to further complicate the chain of command, the use of fighter aviation was the sole responsibility of the Air Defence Corps Commander. Such a system of command and control proved complicated and ineffective in the moments where a decision needed to be taken quickly. During April, command responsibilities were taken from the 31st OCS and transferred to the Air Defence Corps HQ.

The other planned RV i PVO operation, PVO objekata, engaged all remaining assets of the Yugoslav air defence in the area of Belgrade and Novi Sad, as well as in Montenegro (Boka Kotorska–Podgorica), which was outside the *Operacija PVO* area of responsibility. Units included in PVO objekata were separated into two groups: the northern, with Belgrade as the pivotal object for defence, and the southern, concentrated on Montenegro's Adriatic coast.

The group around Belgrade consisted of:

- 204th Fighter Regiment with two fighter squadrons on paper. In reality, MiG-21bis aircraft would not be used, with five MiG-29s deployed to other air bases for Operacija PVO and six more grounded, being out of service, so only five MiG-29s were available for this operation and the defence of the capital city.
- 250th Air Defence Missile Brigade with eight battalions equipped with the Neva (SA-3) system. It was deployed in firing positions around Belgrade and was the strongest air defence unit of the RV i PVO.
- 240th Self-Propelled Missile Air Defence Regiment with four batteries equipped with Kub-M (SA-6) system, deployed around the city of Novi Sad.
- 20th Air Surveillance Battalion with two radar companies at Stara Pazova and Kačarevo and four independent radar platoons at Divoš, Sombor, Koševac and Koviona radar positions. Unlike missile battalions and batteries, most of the air surveillance units of this battalion remained in their peacetime positions. Of the six units, the battalion kept two as reserve.
- Light air defence units within the structure of air bases and of the ground forces were also counted as the support echelon for this operation.

Command and control of the operation was devolved to the 20th Operational Sector Centre (OCS) at Stari Banovci, with static radar positions above the Danube on the right side of Belgrade–Novi Sad motorway.

The southern part of PVO objekata included units deployed in Montenegro, from its capital Podgorica to the gulf of Boka Kotorska, where most of the FRY fleet and naval units were located. This was a modest defence sector, with only two units deployed:

- 60th Self-Propelled Missile Air Defence Regiment, with its HQ at Danilovgrad, west of Podgorica and four deployed batteries in the wider coastal area.
- 58th Air Surveillance Battalion with a radar company at Mount Crni Rt and independent platoons near the city of Ulcinj and at Mount Paštrovačka Gora. The radar company at Crni Rt remained operational at its peacetime position, which was visible from a distance.

Command was organised under the 58th Sector Operations Centre at Golubovci Air Base. Light air defence units of the air base in Golubovci and of the Yugoslav Navy and ground forces were also part of the support echelon.[9]

The senior leadership of the RV i PVO estimated that this organisation of air defence in two operations (actually deployed echelons) was correct and in accordance with available resources and the estimation that the bulk of NATO's air activities would be in Kosovo or southern Serbia below the 44th parallel. However, the shortcomings of this concept would be seen on the first night of the air campaign, since NATO strike packages attacked targets throughout Yugoslavia.

The VJ senior leadership also planned close air support for the ground forces of its Third Army deployed in Kosovo and Metohija and southern Serbia. The plan was developed by the RV i PVO HQ and the targets were selected by the Third Army.

The plan for close air support of the Third Army was further developed by orders given by the General Staff on 15 March. General Smiljanić recalled that simultaneously with the start of NATO air strikes on Yugoslavia, the RV i PVO was ordered to carry out its own strikes on NATO forces deployed in Macedonia and on the UCK training and supply centres in Albania. The aim was to cause as heavy losses as possible, in both personnel and equipment.

The plan for which the Yugoslav Air Corps was responsible included the following attacks:

- In Albania, targeting UCK forces at Paci on the Vljadi–Ćoraj road with six G-4 Galebs, and a UCK training camp at the village of Kocanoj, some 2.5km north of Bajram Curi, also with six G-4 Galebs.
- In Macedonia, strikes on barracks in the city of Tetovo in western Macedonia with six J-22 Oraos. There would also be another strike on a NATO helicopter base at Skopski Petrovac airport with eight J-22 Oraos, and an attack on Režanovce airfield near Kumanovo – where helicopters and some other NATO forces were deployed – with eight G-4 Galebs.

The commander of the Air Defence Corps also received orders to carry out an attack with his assets. Only one mission was planned: an attack on the Krivolak range, where NATO forces were deployed, with eight MiG-21s. Four MiG-29s were to provide fighter cover for the strike packages. Two of them were to patrol in the area from Vranje–Bujanovac and to cover strike packages which would attack targets in Macedonia. Meanwhile, the other two MiG-29s were to patrol around Berane and Rožaj and to cover the groups attacking targets in Albania. The orders for the mission were very precise. But General Smiljanić, the commander of the Yugoslav Air Force, recalls: "The carrying out of this task was strictly under the control of the Supreme Command HQ, and I was personally ordered that only the President of the state [FRY] and supreme commander Slobodan Milošević could issue orders that this mission should be carried out."

Despite the detailed planning, Smiljanić warned Milošević of the inferiority of his forces in the event of them being attacked by NATO formations. Smiljanić, a former MiG-21 pilot, especially noted the inferiority of the MiG-21bis.[10]

Surprisingly, RV i PVO planners expected a NATO airborne landing in Kosovo. The 83rd Fighter Regiment, 229th Fighter-Bomber Squadron and one helicopter anti-tank squadron with some air defence units were tasked to engage any enemy airborne formations. The expectation that an airborne attack would be launched remained almost until the start of the NATO air campaign.

Gradual Mobilisation of the RV i PVO

Approval for the planned use of the RV i PVO came on 12 February 1999, heralding the start of its preparations for combat. But although mobilisation of RV i PVO units started on 16 February, deployment of reserve personnel was only gradual. Moreover, it was publicly labelled as a 'call to military exercise' and not a 'call to war mobilisation'. The outcome of mobilisation of reservists was thought to be uncertain, and their attitude was mostly unknown. By 23 March, a total of 5,705 reserve personnel had turned out, some 73 percent of those which had been called up by RV i PVO units. Despite it being obvious that NATO was about to launch an air campaign against Yugoslavia, the mobilisation was announced on the late evening of 24 March, actually during the first NATO air strikes.

On 18 February, air force personnel had started to disperse ammunition, spare parts, fuel and other equipment from their peacetime premises to locations around air bases. On 19 February, all absence and leave was cancelled, and orders were given for the permanent presence of 30 percent of personnel in each unit.

During this period, almost all RV i PVO units were put on alert.

At 2350 hours on 16 February, the 126th Air Surveillance Brigade was alerted and started its mobilisation. The mobilisation process included only the 20th and 31st battalions, which were in Serbia, while the 58th Battalion, deployed in Montenegro, would be mobilised later. Up to 4 March, the brigade was manned by 79 percent of reserve personnel. The brigade had a problem with drafting specialised and other vehicles from civilian contractors to create a wartime reserve, only 20 percent of which were available. Part of the brigade (six radar companies and five independent platoons) created march columns with transport ready to deploy them wherever required. Other radar units were ordered to remain at six-hour readiness for deployment out of their static radar positions. On 20 February, three radar units were at improvised radar positions awaiting enemy attacks at the prominent heights of Kovanluk, Paštrovačka Gora and around the city of Niš.[11]

On 0800 hours on 17 February, the 450th Missile Regiment was mobilised. Training of reservists and the youngest conscript soldiers started, as well as dispersion of equipment and spare parts. Two missile battalions from the 250th Missile Brigade and 450th Missile Regiment were set up in marching order, as well as batteries from Nos 60, 230 and 240 Self-Propelled Missile Regiments.[12]

Based in Podgorica, the six-squadron 172nd Aviation Brigade was mobilised on 18 February, retaining 30 percent of personnel on permanent presence in the units.

On 20 February, Quick Reaction Alert (QRA) fighter pairs were doubled. Now there were four fighters in QRA at Batajnica and Priština. Four more MiGs were on high alert status as back-up in both regiments. In the meantime, the technicians of the 'Moma Stanojlović' Air Depot, together with others from the fighter units, managed to achieve 98 percent airworthiness in the

An impressive line-up of the 12 MiG-29s of the 127th Fighter Squadron at Batajnica, seen in mid-1998. This was most likely the last photograph of such a large group of MiG-29s prior to Operation Allied Force, in which many of them would be claimed in the air or lost on the ground. (MCO Odbrana)

Another impressive line-up of 12 MiG-21s (with two more seen behind in QRA) of the 126th Fighter Squadron. As the photo clearly depicts, nearly all of the MiGs still had the old RV i PVO markings, a clear indication that they had not undergone any overhauls since mid-1991. (M. Micevski)

There was a clear difference between the Soviet-produced surveillance radars: the P-12 (NATO, Spoon Rest A) on the left and P-18 (NATO, Spoon Rest D) on the right. They are shown here at the Vrbica firing position near Mladenovac, some 50km south of Belgrade, as the part of the 7th Missile Battalion of the 250th Missile Air Defence Brigade. (B. Dimitrijević)

MiG-21 fleet, and 71 percent in the MiG-29 squadron. Besides QRAs, a single An-26 and pairs of Mi-8 and Gazelle helicopters at Batajnica, plus three more helicopters in Niš, were maintained in combat readiness during daytime.[13] From 8 March, meanwhile, the 98th Fighter-Bomber Regiment was on alert with 50 percent of its personnel available.

Two air bases without aviation units, Ponikve and Sjenica, were also put on alert. A battalion activated at Ponikve organised the mobilisation of the 85th Maintenance Battalion and 85th Light AAA Battalion on 23 February. Two days later, both units arrived at Sjenica Air Base and started to organise the living quarters for themselves and the fighter units which were planned to arrive.[14]

The slow arrival of the mobilised reservists, and slower arrival of vehicles from the reserve (only 14 percent), was obvious. It led to a decision that some 8,000 conscript soldiers, which were due to finish their service in mid-March, would be retained in their units. This contingent, which had 12 months' experience of service in the units, helped to maintain RV i PVO combat readiness at a sufficient level.[15]

The problem of mobilisation for RV i PVO units was especially notable in Montenegro. As an illustration, the 60th Self-Propelled Missile Regiment had received only 15.4 percent (159) of its reservists during the whole period of mobilisation and the campaign, from 16 February to 12 June. There was a similar situation with the 58th Air Surveillance Battalion, which remained at less than 50 percent of its full strength during the same period.[16]

Prior to the air campaign, there was a systematic effort to renew resources and repair equipment. Air Depot Moma Stanojlović at Batajnica managed to repair and return to service some 25 aircraft, four radars, 20 light AAA guns and hundreds of vehicles. This provided an important boost to units' nominal strength. General airworthiness grew from 61 percent in January to 72 percent in March, although in many cases this was 'functional readiness' rather than 'combat readiness'. There was a specific problem with the MiG-29s with regard to adequate overhauling, engines and spare parts. It was estimated in 1998 that without the purchase of overhauled engines and KSA-2 generators, only four MiG-29s could be maintained serviceable. There was also a critical shortage of armament. There were just 150 R-73E missiles (41 percent of those required), 205 R-60MK missiles (36 percent), 65 R-27R1 missiles (18 percent) and 11,053 rounds of 30mm ammunition (19 percent). Furthermore, simulators had been out of service since 1996.[17]

According to the author's research, prior to the air campaign there were a total of 72 available MiG-21s (51 bis, 15 UMs, four Ms and two Rs). There were also 14 MiG-29s, plus two two-seaters, making a total of 16. Thus, on 23 March 1999, the Yugoslav Air Force had the following number of fighters at its disposal:[18]

83rd Regiment:	30 MiG-21bis and six MiG-21Ums, with a total of 48 pilots
204th Regiment:	16 MiG-21bis and three MiG-21UMs (one two-seater out of service) 16 MiG-29s and 2 MiG-29Us (six/one out of order), with a total of 52 pilots.[19]

The remaining eight MiG-21s were in the 1/353rd Reconnaissance Detachment (four Ms, two Rs and two UMs). A single MiG-21bis was used by the Aviation Test Centre, and the other MiG Bis/UMs were with the 'Moma Stanojlović' Air Depot waiting for overhauls.

NATO Deployment and Target Estimations by the Beginning of 1999

As previously noted, the 'Activation Order' (ACTORD) for NATO forces in the theatre was issued on 13 October 1998, during the peak of the October crisis. Following the NAC decision on 27 October, the order was suspended but remained active.

In February and March 1999, NATO actually strengthened its air components, despite the diplomatic efforts and talks in Rambouillet. During this period, the USAFE rotated its units in Italy. The 494th FS from the 48th Fighter Wing at Lakenheath arrived at Aviano in December with six F-15Es. This squadron had returned from deployment in Turkey, from where it controlled air space over Iraq. The unit replaced the 492nd FS, which returned to its home base and later in February deployed to control Iraqi air space. On 7 January, six A-10 Thunderbolts ('Warthogs') arrived at Aviano from Spangdahlem. These belonged to the 81st Fighter Squadron, which by 24 March would increase the number of deployed A-10s at Aviano to 15. After the controversial events in the village of Račak (15-19 January 1999), NATO ordered its forces deployed at Italian air bases to be at 48 hours' combat readiness. Soon after, part of the 492nd FS from Lakenheath returned to Italy as back-up.[20]

The French Air Force (ALA) had deployed its token forces since the end of the war in Bosnia. They were deployed as part of Operation Salamandre, which began on 22 December 1995 and was still active at the beginning of 1999. On 22 January 1999, France decided to create a new operation over the Balkans, entitled Trident. On 26 January, the French Navy carrier *Foch* embarked for the Adriatic, and two days later was already on station. *Foch* carried 16 Super Etandards, four Etandard IVPs and four helicopters. At Istrana, there were eight Mirage 2000Cs, four Mirage 2000Ds and four Jaguar As. Four Puma helicopters were deployed to Macedonia for eventual CSAR (Combat Search and Rescue) missions. Until the beginning of the air campaign, only one additional French aircraft was sent to Italy: a Mirage 2000D on 15 March.[21]

The RAF also maintained a contingent at Gioia del Colle from previous air operations. On 26 January, four Harrier GR.7s arrived from Laarbruch in Germany, plus a single Canberra PR.9 from its home base in Great Britain. They were all stationed at Gioia del Colle.[22]

The next phase in enlarging NATO's air assets in the region started on 19 February. The USAFE activated the 16th Air and Space Expeditionary Task Force Noble Eagle, with headquarters at Aviano, to support the operation. At the same time, the USAFE also activated the 16th and 31st Air Expeditionary Wings at Aviano, and the 100th Air Expeditionary Wing at RAF Mildenhall.[23] This reinforcement was part of the newly launched Joint Task Force Operation Noble Anvil. Further reinforcements started to arrive on the weekend of 21-22 February.

On 21 February, a precious contingent of F-117s from the 8th EFS ('Black Sheep') from Holloman Air Base in New Mexico landed at

The most potent of the USAFE and NATO strike assets was the F-15E Strike Eagle. This type was deployed from the 48th Fighter Wing at RAF Lakenheath to Aviano Air Base, which became the hub for most of the US and NATO aviation units that took part in Operation Allied Force. (US DoD)

Aviano. Their flight had lasted for 14 hours, with several mid-air refuellings. The landing of the Nighthawk fleet at Aviano was an impressive moment for all the airmen at the base. Soon, finding room for the F-117s inside Hardened Aircraft Shelters at Aviano posed the greatest problem.[24] Eight B-52H bombers from the 2nd BW arrived at RAF Fairford from the United States. They did not carry out their first sorties until 9 March, with support from the KC-135 tankers of the 100th ARW from RAF Mildenhall.[25] On the following day, 10 March, a single B-2A Spirit stealth bomber, named *Spirit of Arizona*, carried out a training sortie from the United States to Fairford, where it was refuelled and the crew was changed, before it returned to Whiteman AFB. This was a clear sign that stealth bombers may be used in the near future.[26]

At Aviano, there were now more USAF and NATO assets. The complete 494th FS was at Aviano and joined the 31st AEW. The 23rd Fighter Squadron with F-16CJs arrived from the 52nd FW at Spangdahlem. But the most important reinforcement was the arrival of 12 F-117As belonging to the 8th FS, 49th FW, at Holloman. On 23 February, the 43rd ECS arrived from its home base at Arizona with its specialised C-130s.[27]

Aviano already hosted Portuguese F-16s, RCAF and Spanish F/A-18s and an RAF E-3D Sentry AWACS detachment (Nos 8 and 23 Squadrons).[28] Commenting on the reinforcements that turned the peacetime 31st Fighter Wing into an Air Expeditionary Wing with such a massive fleet, General Daniel Leaf likened his wing to the "All Star Game in the NBA!"[29]

The Yugoslav Air Force's 280th ELINT Centre had been monitoring NATO air activity in the region since 1992 and became experienced in tracking NATO aircraft. The Yugoslavs began to register specialised US Navy platforms such as the EP-3 and EOP-3 or European naval reconnaissance aircraft over Kosovo from 15 February. Yugoslav ELINT operators first identified F-117A training sorties from Aviano on the night of 25 February. The RV i PVO units were alerted that their appearance in the region may be a clear sign that the air campaign was imminent. Yugoslav (Serb) operators monitored their radio traffic and identified various call-signs. The stealth fighters carried out their missions singly or in pairs over the Adriatic. Later, their sorties moved closer to Yugoslavia, flying over Bosnia and Herzegovina. On 26 February, the first sorties of E-8

Spain maintained their F/A-18 contingent at Aviano from mid-1995, manned by personnel of Ala 12 and Ala 15. Here, a F/A-18 (serial C.15-51, with unit markings 12-09) is prepared for a mission during Operation Allied Force. (AF/SE)

A Portuguese Air Force F-16A (serial 5101) belonging to Esquadra 201 *'Falcoes'* from Monte Real Air Base during a CAP mission. (US DoD)

On 21 February 1999, after a 14-hour flight from Holloman AFB, the bulk of the Lockheed F-117A Nighthawks from the 8th EFS (Black Sheep) landed at Aviano. Their first missions were identified by the 280th ELINT Centre RV i PVO on 25 February. (DoD)

EA-6B Prowlers were the most precious NATO air asset during the whole of Operation Allied Force, opening windows in the Serb air defences and covering strike packages with EC measures. Here, a USMC Prowler taxies on the Aviano apron loaded with AGM-88 HARMs (High-Speed Anti-Radiation Missile) and AN/ALQ-99 tactical jamming pods. (DoD)

Joint STARS surveillance platforms were registered in Albanian and Macedonian air space.[30] Yugoslav ELINT operators noted significant changes in the procedures of USAF (NATO) strike aircraft missions. Instead of small formations in pairs or detachments, their training was now organised in strike packages ranging from ten to 30 aircraft. By the beginning of March, a significant increase in NATO electronic reconnaissance and other activities was noted in Macedonia, Albania and Kosovo.[31]

During this period, NATO had amended its plans and list of potential targets on Yugoslav territory. The creating of the list of targets was a long process which was completed through various means: satellite and air imagery, the presence of the different international forces in the region and monitors who were present at the Yugoslav air bases between 1992 and 1995,[32] facts and figures given by ex-Yugoslav Army soldiers who abandoned their homeland, and the implementation of the mutual control mechanisms of the former Yugoslav armies according to the Dayton Accord. Using all of those means, a list of targets was created, with detailed descriptions, geographic coordinates and importance range (high, middle or low). It was a long and painstaking effort, but produced great success in locating important targets during the campaign. It was certainly not down to a ‘fifth column’, ‘traitors’ or ‘locators’ inside Yugoslavia, as claimed by the pro-Milošević media during and after the air campaign.

At the beginning of the NATO air campaign, a ‘Master Target File’ included 169 targets, among them 51 ‘authorised’ locations, meaning they were to be attacked. By the end of Operation Allied Force in June 1999, there were a total of 976 targets on the list. Most of the work in creating the target list was carried out by the Americans, who possessed the best equipment for obtaining information through surveillance. The rest was down to the effort and work of their European allies. Each NATO member state could veto a specific target. Some of them did so intentionally, mostly instigated by their own political or economic interests. France in particular was

An EC-130 Hercules departs after receiving fuel from a 100th Air Expeditionary Wing KC-135 Stratotanker. (DoD)

accused of having vetoed the targeting of bridges in Belgrade, TV stations and power plants. It was believed that some other nations were behind the almost total exclusion of targets in Montenegro from the lists.[33]

NATO Assets on the Eve of the Conflict

Under the ACTORD, the air campaign against Yugoslavia would be launched on the evening of 24 March 1999. The bulk of the forces to be involved were those of the USAFE, with reinforcements from USAF units based in CONUS, such as the stealth fighters and bombers, conventional bombers, strategic reconnaissance and ELINT components. There were also NATO allies with their contingents based at Italian air bases or in their homeland bases.

On 24 March, 214 US and 120 NATO aircraft were assembled ready to launch an air operation against Yugoslavia. While these were impressive numbers, they were far less than what was needed to crush the resistance of the Yugoslav Army and RV i PVO. By the last phase of Operation Allied Force in early June, the number of available aircraft would increase to 731 USAF and 300-324 from the NATO allies – numbers vary, depending on the source.[34]

Most of the USAF units were stationed at Aviano. There was the ‘domestic’ 31st Fighter Wing with its two fighter squadrons, Nos 510 and 555. This wing became the Air Expeditionary Wing (AEW) since it controlled the other units that arrived at Aviano. Such units received the prefix ‘E’ which denoted their expeditionary status. They included the 494th EFS (belonging to the 48th FW at Lakenheath) and 23rd EFS (52nd FW at Spangdahlem) from the USAFE. Arriving from CONUS were the USAF’s 8th EFS (49th FW at Holloman), 42nd and 43rd ECS (from the 355th AW at Davis Monthan). There were also elements of the USMC and US Navy ECM assets: EA-6B Prowlers from VMAQ-1, 2 and 4 (from MCAS Cherry Point) and VAQ-134/138/140/209 squadrons (NAS Whidbey Island and Joint Base Andrews). The entire Prowler group became known as the ‘Rainbow Coalition’ because of the mix of the units. [35]

Aviano also housed the assets of the European allies, including F-16s from Portugal, F/A-18s and KC-130s from Spain, E-3D Sentries from the RAF and finally CF-18s from the RCAF. Some 175 aircraft were squeezed into the base. On 20 February, to accommodate all those surplus airmen, a tented city was formed inside the base called ‘Caserma Barbarisi’, initially with some 100 tents. The number of tents and airmen rose constantly, with some 2,000 personnel living in the tents at the end of May. During the early days of Allied Force, Aviano was teeming with journalists and TV station workers, which only added to the feeling of tension around the base.

Cervia was another Italian air base with deployed USAFE units. On 21 February, the 493rd EFS with F-15C fighters arrived there from Lakenheath. The 501st Expeditionary Operations Group (EOG) was established at Cervia, consisting of the 493rd EFS, a single logistical unit and the Air Base Squadron. They were part of the 48th AEW, with their HQ remaining in the UK at Lakenheath. The 48th AEW controlled its remaining 492nd EFS with F-15Es. Later, by the beginning of April, it was reinforced with the 54th EFS from Elmendorf, Alaska (3rd FW), with five F-15Cs. The pilots and ground crew left their F-15Cs at Lakenheath and proceed to Cervia, where they joined the 501st EOG.[36]

There were also USAF formations in Italy at Brindisi. From the early 1990s, there was the 352nd Special Operations Group (SOG), which arrived from Mildenhall. They operated special versions of the basic C-130 Hercules type, such as the MC-130P Combat Shadow and MC-130H Combat Talon II, and MH-53J Pave Low helicopters. Part of this unit used a forward base in Tuzla, Bosnia and Herzegovina or in Hungary throughout 1999. On the afternoon of Saturday, 20 March 1999, the 352nd SOG was put on alert for action. In addition to four MH-53Ms from the 20th SOS (Special Operations Squadron), there were four 55th SOS MH-60Gs en route from the United States. The 55th SOS contingent was a surprise arrival, because the unit was scheduled to deactivate in June 1999. Later that afternoon, a C-5 with the MH-60G Pave Hawks and crews on board landed at Brindisi. The 20th SOS arrived the next day. “We had a robust force of nine MH-53J/M Pave Lows with eleven crews and four MH-60G Pave Hawks with five crews from the 55th SOS,” recalled Colonel Paul Harmon, commander of the 21st SOS. “The team was diverse with a mix [of] several types of helicopters, Special Tactics and Special Forces so we took on the wartime moniker Task Force HELO.”[37]

At Sigonella Naval Air Station in Sicily, the 99th EARS was deployed from mid-March. The squadron was equipped with 10 KC-135 tankers from different ANG (Air National Guard) units which rotated on TDY (Temporary Duty) from Fairchild, McDill, McConnell and Grand Folks air force bases in the United States. Five more KC-135Rs were added from the 366th FW at Mountain Home. As the part of the USAFE, Mildenhall air base in the UK also became an important hub for different tanker and airlift units. The resident 100th ARW consisted of only one air squadron, the 351st ARS, but it was soon reinforced with RC-135s belonging to the 55th Wing at Offutt AFB, as well as C-5s and C-17s from different airlift squadrons from CONUS. The commencement of Allied Force rapidly saw the ramp at Offut empty, as RC-135s and their crews flew to Europe. Two 15-hour missions were flown each day from Mildenhall.[38]

Italian Lockheed F-104S ASAs were used during the troubles in the Balkans mostly for CAP missions, as was the case with this example, belonging to 22 Gruppo, 51 Stormo AMI, disbanded a couple of weeks before Operation Allied Force started. (AF/SE)

The Royal Air Force downsized its deployed forces in Italy after the Bosnian War but remained present up to the start of the new campaign. RAF fighters were based at Gioia del Colle from the early 1990s, taking part in different air operations over Bosnia and Herzegovina. The UK maintained a detachment of four GR.7 Harriers until October 1998, when the number was increased to eight. From September 1998, Tristar tankers were based at Ancona, where the number of RAF personnel reached 90 during the operation. They deployed a limited number of aircraft prior to the start of Operation Allied Force. On the first day of the operation, the RAF had eight Harriers, three Sentry AWACS and two Tristar tankers in the theatre. At the beginning of Allied Force, the RAF deployed more of its assets to Italy: four Harriers (from No. 1 Squadron, which would be at the forefront of the first attacks in the air campaign) went to Gioia del Colle and another Tristar tanker to Ancona. The RAF had prepared eight Tornados for deployment, but they did not perform their first sorties until later, on 4 April. Tornados belonging to Nos 9, 14 and 31 Squadrons operated from RAF Brüggen in Germany, where RAF VC-10 transporters were also deployed.[39]

Another major Allied participant was France. Most of its Armée de l'Air assets were based at Istrana or on the French Navy aircraft carrier *Foch* in the Adriatic. At Istrana, the following ALA types were deployed: Mirage 2000Cs (eight, later 10), Mirage 2000Ds (four, later 11) and Jaguar As (six).[40] At the end of May 1999, the French deployed 15 Mirage 2000Ds (belonging to the *1, 2* and *3/3 Escadre*), 10 Mirage F-1CTs (1 and 2/30E) and 12 Jaguar As (1 and 3/7E), with some 100 pilots and 300 ground crew. There was a single ELINT C-160G Gabriel. *Foch* housed the following French naval air assets: 12 Super Etandard Modernizes (Flotilles 11F and 17F), 4 Etandard IVPs (16F), five Alizes (6F) and four helicopters (35F). The French Navy carried out its first missions from *Foch* on 30 March, the first day missions approved by NATO. Super Etandards were not equipped for night missions.[41]

The German Luftwaffe deployed its air assets to Italy in the summer of 1995, thereafter carrying out missions over Bosnia and Herzegovina prior to and during Operation *Deliberate Force* with the temporary 1. Einsatzgeschwader. In October 1998, German aerial units returned to Italy, the 32. Jagdbombergeschwader from Lechfeld Air Base deploying Tornado ECRs to Piacenza. In January 1999 there were 14 Tornado ECRs and six Tornado IDSs from the

The US Navy LHD-3 USS *Kearsarge*, a Wasp-class amphibious assault ship, was deployed to the Adriatic to support Operation Allied Force, carrying the USMC's 26th MEU. Besides helicopters, it also housed an AV-8B Harrier II unit, VMA-231 Squadron, which suffered a single non-combat loss during the operation. (DoD)

51. Aufklärungsgeschwader. German aircraft took part in SEAD (Suppression of Enemy Air Defence) missions from the first night of Allied Force.[42]

The Royal Danish Air Force and Royal Norwegian Air Force both deployed six F-16As to Grazianese Air Base in January 1999. Danish and Norwegian F-16s were part of the "B-team," as General Michael Short referred to the countries that did not play a major part in the operation due to political or equipment constraints. They jointly flew CAP missions throughout Operation Allied Force.[43] Another joint Allied unit was the Belgian–Dutch force, known as 'B-D DATF', at Amendola. It was also equipped with F-16A fighters. This unit was highly experienced in CAP missions over the Balkans, having been active since the start of Operation Deny Flight in mid-1993. There were eight Dutch and four Belgian F-16s until January 1999, when they were reinforced to leave a total of 20 Dutch and 10 Belgian F-16A/MLUs.[44] The Dutch RNLAF also operated a tactical reconnaissance version of the F-16A with other fighters deployed to Amendola. The Turkish Air Force maintained at Ghedi a detachment of F-16 fighters, also dating from Deny Flight and later operations over Bosnia and Herzegovina. At the beginning of 1999, the Turkish detachment at Ghedi received brand new AIM 120 AMRAAM air-to-air missiles, which provided an important boost to its fighting capabilities.

The Italian Air Force, or AMI, was mostly engaged as the air base provider to other NATO contingents. However, it also engaged its own combat units during Operation Allied Force. The AMI had 42 aircraft at the beginning of the operation, a number that grew to 50 by its end. Italians engaged in CAP, CAS and SEAD missions. They also used their single Boeing B-707 T/T for air refuelling. Engaged AMI assets included Tornado F.3 fighters from 12 and 156 Gruppo (36 Stormo) at Gioia del Colle. They were joined by the Tornados from 53 Stormo and 21 Gruppo in January 1999. They were all later transferred to Ghedi, leaving Gioia del Colle to USAF and RAF contingents. Piacenza housed 155 Gruppo with six available Tornado IDS-HARMs. Equipped with AMX strike aircraft were 13 and 101 Gruppo (32 Stormo) at Amendola and 102 Gruppo (51 Stormo) at Istrana. Ageing Lockheed F-104S/ASA-M Starfighters tasked for CAP missions belonged to the following Italian units: 5 Stormo at Cervia, 8 Gruppo (37 Stormo) at Gioia Del Colle, 9 Gruppo (4 Stormo) at Grosseto and 10 Gruppo (9 Stormo) at Grazianese. The Italians also tasked a single G-222V for ELINT missions, but it was operational only in the earliest stage of the operation.[45]

On 23 March 1999, there were the following naval forces in the theatre to support Operation Allied Force:

- two US Navy 6th Fleet destroyers and a single landing ship in Albanian territorial waters.
- the French aircraft carrier *Foch* and three destroyers in the mid-Adriatic.
- the NATO naval force STANAVFORMED, which included eight destroyers or frigates and a single ELINT/SIGINT vessel in the south Adriatic, and further NATO vessels in the Aegean Sea.

It is notable and unusual that Operation Allied Force started without the presence of any US aircraft carriers. On 14 March, USS *Enterprise* left the Adriatic and sailed to the Persian Gulf. It was expected that another aircraft carrier would arrive in its place, but it would take until two weeks into the air campaign for the US Navy to deploy an aircraft carrier for the operation.

The lack of such a valuable asset at the outset could be proof that US political and military officials expected only a brief campaign against Yugoslavia, and that Slobodan Milošević would accept political and diplomatic conditions over Kosovo within the first few days of air strikes commencing. Since this did not happen, the following aircraft carriers were deployed in April: the US Navy's USS *Theodore Roosevelt*, the Royal Navy's HMS *Invincible* and the Italian Navy's *Giuseppe Garibaldi*. USN amphibious assault ships were also deployed: first USS *Nassau* and later USS *Kearsarge*.

Last Diplomatic Efforts to Stop the War

Events proceeded rapidly after the failure to resolve the crisis at Rambouillet. A second round of Serb–Albanian talks, organised in the Kleber Centre in Paris between 15 and 19 March, also failed. No more such talks were set up. In the end, on 18 March 1999, the Albanian, American and British delegation signed what became known as the 'Rambouillet Accords', while the Serbian and Russian delegations refused. Such an outcome created a situation which led to air strikes against Yugoslavia, General Wesley Clark concluded.[46]

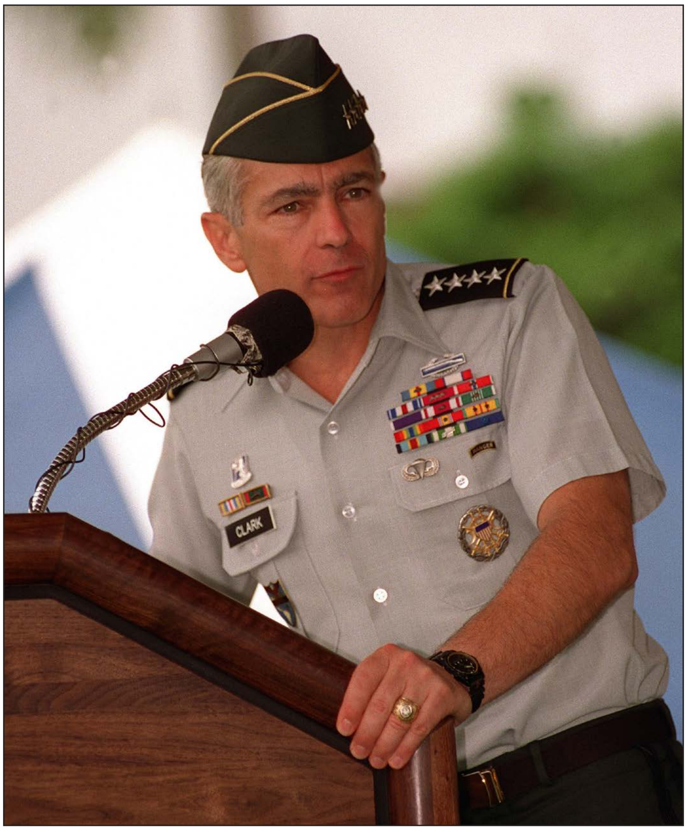
In this period, NATO and the United States accused the VJ and MUP Srbije of violating the October 1998 agreement and moving extra forces into Kosovo and Metohija province. Preserved minutes from the Yugoslav Army General Staff collegiums confirm that the reinforcements were sent into the province or along its borders during the previous months, under the orders of VJ Chief of the General Staff General Ojdanić. The minutes also explain the questions that General Clark raised in talks with Ojdanić in mid-March.[47]

After the failure of diplomatic talks, international KVM monitors from the OSCE (Organisation for Security and Cooperation in Europe) were withdrawn on 20 March over fears for their safety ahead of the anticipated bombing by NATO. General Clark later commented that it was a miracle that the Serbs did not take any hostages or attack the monitors. The KVM was headed by William Walker, who remained in his office in Priština in Kosovo after the events in Račak, despite being thereafter proclaimed as a *persona non grata* in Yugoslav territory.[48]

On the following day, 21 March, the NATO monitoring team from the RV i PVO HQ at Zemun and the Yugoslav monitoring team from NATO's CAOC (Combined Air Operations Centre) at Vicenza were also withdrawn as the belligerence was ramped up. During the implementation of Operation Eagle Eye over Kosovo, a total of 36,218 hours of reconnaissance missions were flown, including 28,511 hours by reconnaissance aviation, 6,744 hours of UAV flights and 923 hours by U-2 strategic reconnaissance aircraft.[49]

One final chance to avoid war came with the arrival in Belgrade of US ambassador Richard Holbrooke on 22 March, with the idea that the crisis could somehow be resolved by direct talks with President Milošević. Holbrooke's model was the talks in mid-September 1995, which stopped the Deliberate Force air campaign and enabled the peace-negotiation process to continue, or the previously mentioned talks in mid-October 1998. But these latest talks in Belgrade failed, Holbrooke departing Belgrade with nothing to show for his efforts. It is now believed that Milošević needed the war to explain to the Serbian people why he was losing Kosovo, an important cornerstone in the Serbian perception of its history and tradition.

Soon after Holbrooke's return empty-handed, NATO HQ ordered that air strikes should commence and NATO Secretary General Xavier Solana approved launching of the air campaign. The name of the operation was to be Allied Force, which was chosen



US Army four-star General Wesley Clark, who commanded the air campaign against FR Yugoslavia as the Supreme Allied Commander Europe. He also baptised the operation with the name Allied Force. (US DoD)

after a brief meeting in General Clark's office during which several combinations of words were tested.[50]

Clark took one last opportunity to call the VJ General Staff. Clark later wrote that he had warned General Ojdanić that any attack on NATO forces in neighbouring states would bring "serious consequences." He also warned his Serb counterpart that the Yugoslav Navy should remain anchored in its harbours, or otherwise it would be attacked as any movement by it would be treated as a hostile act. Ojdanić did not have much to say, according to Clark.[51]

On 23 March, the Serbian assembly issued a resolution that condemned the withdrawal of the OSCE monitors and accepted the principle of autonomy for Kosovo and the non-military part of the agreement. Former United States Secretary of State Henry Kissinger commented to the press:

> The Rambouillet text, which called on Serbia to admit NATO troops throughout Yugoslavia, was a provocation, an excuse to start bombing. Rambouillet is not a document that an angelic Serb could have accepted. It was a terrible diplomatic document that should never have been presented in that form.[52]

Both sides used 23 and 24 March to take up their positions for the coming conflict. Yugoslavia declared a status of 'near-war' at 2000 hours on the evening of 23 March.

Contrary to the comments of many involved USAF generals, the start of Operation Allied Force did not come as a surprise, with obvious preparations in Italian air bases and a delay in implementing the ACTORD for 48 hours after it was activated. The Serbs were thus prepared for the attacks when they came.

Deployment of RV i PVO Assets on 23 and 24 March 1999

Following the expectations of the Rambouillet talks between 24 February and 5 March, most Yugoslav units were deactivated, many of the mobilised personnel and vehicles returned to civilian life, and some of the units went back to their peacetime locations. For the Yugoslav senior leadership, especially within the General Staff, it looked like the peace process would prevail.

Seeing the decline of the political efforts by the beginning of the March, the RV i PVO HQ decided to restart measures to improving combat readiness. General Smiljanić later wrote that on 9 March, he suggested to Chief of the General Staff General Ojdanić that the RV i PVO should start its deployment, completing the process by 15 March. The aim was to achieve unit combat readiness within between six and 12 hours of a given signal. However, Ojdanić was in no hurry, explaining that the airmen should not rush to redeploy since the political outcome could still be positive. The RV i PVO thus reacted in accordance with his estimations, the HQ and its units starting to deploy again on 11 March.

The HQ of the Air Defence Corps, 31st Operational Sector Centre, HQ of Third Army and HQ in Priština were manned by Combat Command Groups.

The 126th Air Surveillance Brigade deployed its radar units at improvised radar positions and other areas awaiting attack at Mount Kitka, Mount Golija, Divoš and Sombor (20th Battalion),

Seen at Banovci radar position above the River Danube is an AN/TPS-70 of the 20th Air Surveillance Battalion. This radar site with its operations centre was moved from this position on 23 March 1999 to the underground complex 909 at Straževica and thus managed to evade NATO attacks on the first night of Operation Allied Force. (Rajica Boskovic)

Table 2: Combat readiness of RV i PVO air surveillance units on 24 March 1999 ('D-Day')

126th Air Surveillance Brigade:	Types of Radar	Available at 'D-Day'	Operational at 'D-Day'	Combat-Ready Percentage
1.	S-600	9	6	66.6
2.	AN/TPS-70	4	2	50
3.	P-14 and PRV-11	1	1	100
Total number of radars in radar companies:		14	9	64.3
4.	AN/TPS-63	8	3	37.5
5.	P-15	2	2	100
6.	P-12	1	-	0
7.	S-605	1	1	100
8.	Air Traffic Control	2	2	100
Number of radar platoons:		14	8	57.1
TOTAL		28	17	60.7

Mount Brijač, Mount Vidojevica, Kosovska Mitrovica and Jadovnik (31st Battalion). The equipment and reserve supplies started to be dispersed from 21 March. This process was finished on 5 May, with equipment and reserves at no fewer than 58 locations.[53]

In the 250th Missile Brigade, the mobilisation of reservists continued. Three missile battalions (Nos 4, 5 and 7) were deployed at new improvised positions and started with training of personnel. On 18 March, the 450th Missile Regiment started its preparations. The buildings of this regiment and the neighbouring 31st Air Surveillance Battalion and 31st Sector OC were camouflaged with canvas curtains, which helped them avoid being hit by cruise missiles on the first night of attacks on 24-25 March. All of the five self-propelled missile regiments also deployed out of their barracks to alternate and improvised firing positions. On 15 March, the Federal Department for Air Traffic Control began to implement five-hour combat readiness shifts at all civil airports and air bases.[54]

During Tuesday 23 March, the RV i PVO HQ and both of its corps (*Korpus PVO* and *Vazduhoplovni Korpus*) moved to their 'War Command Posts', with shifts of officers established for command and control in a combat environment.

At 1100 hours on the previous day, 22 March, General Smiljanić ordered the 20th Operational Sector Centre to be moved between 1810 hours and 2300 hours. The 20th OCS was currently based on a prominent hill overlooking the Danube near Stari Banovci. Smiljanić ordered that it should be transferred underground to a location known as 'Object 909' below the hill of Straževica, in the Belgrade suburb of Rakovica. However, his aides in the RV i PVO HQ were against such a move, as it would harm the already established air defence system and it was difficult to move the large, fixed radar antennae. The HQ and operations centre of the Air Defence Corps and 126th Air Surveillance Brigade were already deployed underground at Object 909, which proved to be a safe location throughout the duration of Operation Allied Force. The transfer of the 20th OCS actually proved a good decision, as the Stari Banovci site was targeted and completely destroyed by NATO forces the following night.[55]

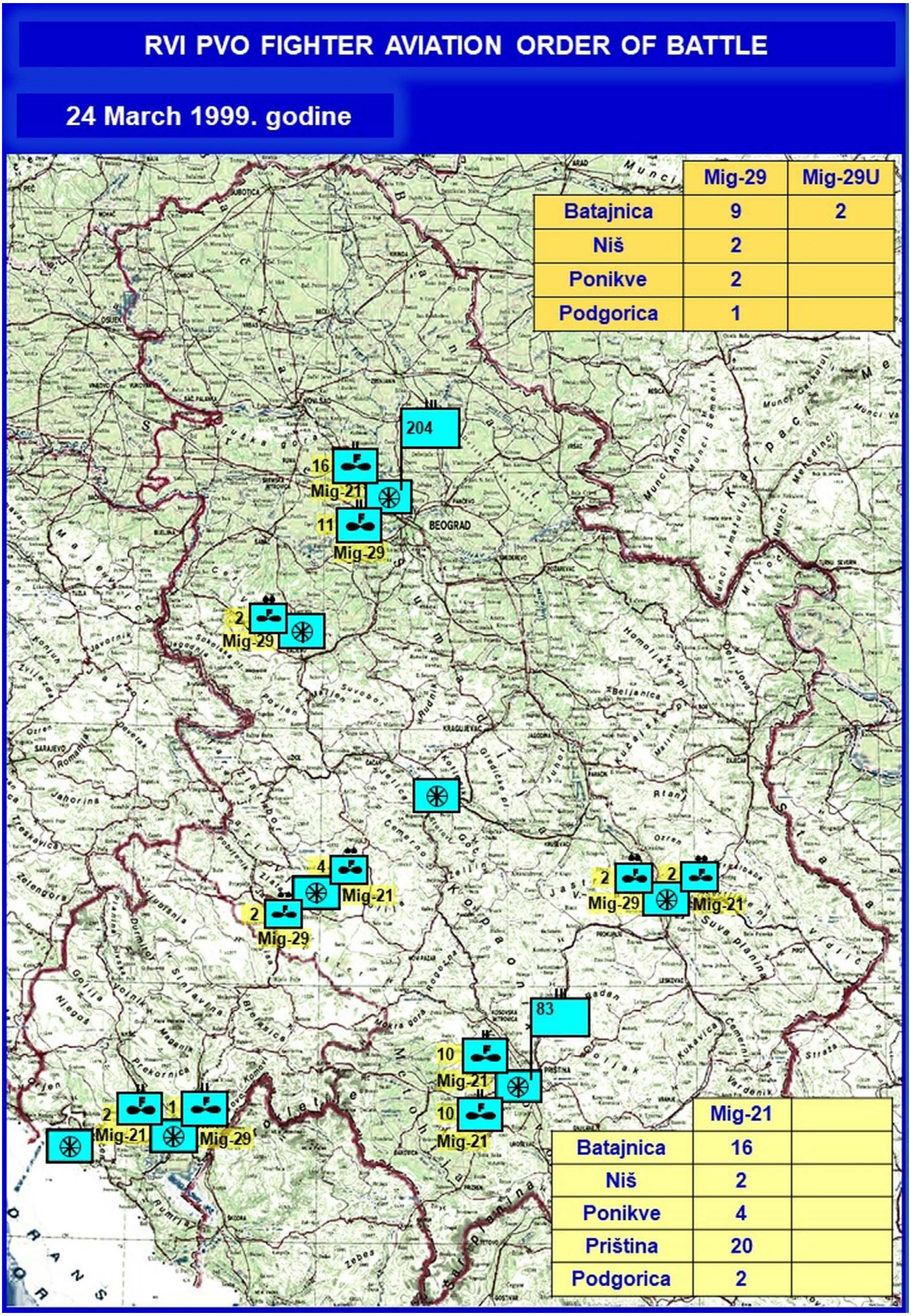
For the aviation units, 23 March had been planned as a 'flying day', but all training flights were now cancelled. Dispersion of equipment started, with preparations for the moving of aircraft, helicopters and other equipment to their designated war positions. At 2215 hours, the whole RV i PVO was put on combat alert. Personnel started to gather in their units. At 2345 hours, an 'air alert' was given to the 204th Fighter Regiment, which immediately deployed four MiG-29s to Niš Air Base. At 0318 hours the next day, four MiG-29s in Niš were declared at 10 minutes' readiness. Upon receiving this signal, the ground crew of No. 126 Squadron started to move their MiG-21s out of Batajnica Air Base, dispersing them to alongside the nearby Belgrade–Novi Sad motorway. Since nothing happened that night, the MiGs were returned to the base early on the morning of 24 March. They were now dispersed around several gates and aprons at Batajnica in groups of three to six aircraft.[56]

At midnight on 24 March, the 83rd Fighter Regiment at Priština was put on combat alert. At Ladjevci, personnel of the 98th Aviation Regiment moved into houses in a neighbouring village. Their Orao strike aircraft were parked in HAS or dispersed all over the air base. The same procedure was followed at Golubovci with Galebs and helicopters of the 172nd Aviation Brigade. Most of the aircraft there had already been taken into the underground Zeta complex on 12 March. The others were dispersed around the air base aprons and taxiways. Conditions at Golubovci for dispersion were difficult. The air base was built on flat ground, with mostly Mediterranean overgrowth and rocky or almost desert surrounding. Most of the personnel moved to Zeta or the basements of buildings all over the base.[57]

During the night of 23-24 March, the units of the 126th Air Surveillance Brigade started to abandon their peacetime positions. The radar companies and platoons moved out of the static complexes at Stari Banovci, Mount Goleš and Mount Zlatibor. It was difficult task, however, as their war positions had not been well prepared. Their improvised locations almost certainly influenced the effectiveness of the radars, especially, the sophisticated American types such as the Westinghouse three-dimensional AN/TPS-70s.[58]

Meanwhile, the RV i PVO's main air defence unit, the 250th Missile Brigade, abandoned most of its peacetime positions. Brigade HQ was established at the Ljuta Strana facilities, near the village of Ripanj, south of Belgrade. Only two missile battalions (Nos 7 and 8) were combat-ready at firing positions in the villages of Boždarevac and Orašac. The other six missile battalions (Nos 1–6) remained on full alert in vehicles near positions at Vojka, Ovča, Šimanovci, Ub, Bojnička Šuma and Brestovik. Two Rocket-technical battalions (Nos 1 and 2) responsible for missile storage, preparing and maintenance remained in peacetime positions at the villages of Sremčica and Zuce, in the vicinity of Belgrade.

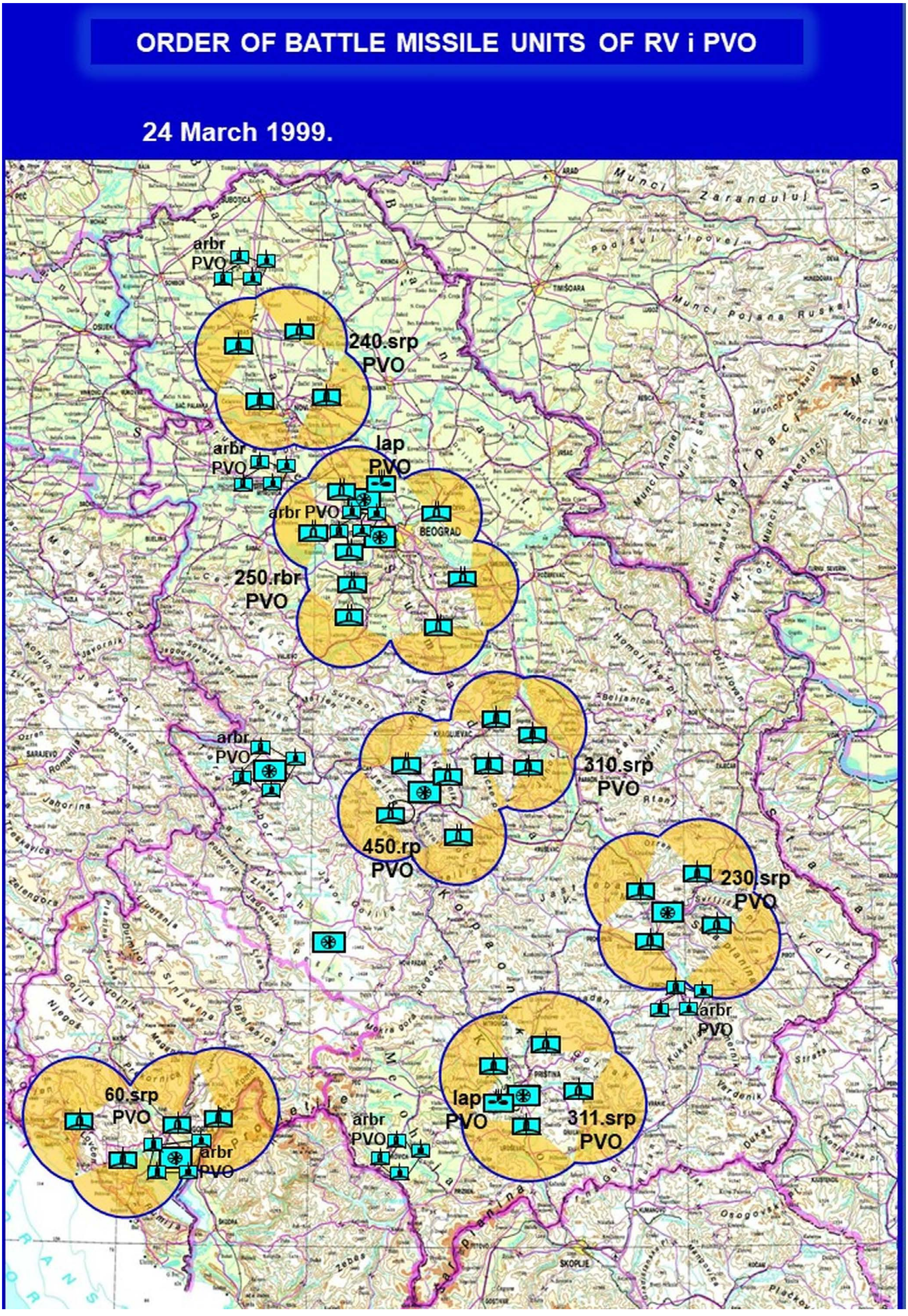
The other Neva-equipped unit, the 450th Missile Regiment, had its HQ in the city of Kraljevo. It had two battalions in firing positions at Preljina and Gornji Ladjevci (1st and 2nd). Two other missile battalions were in position at Lipnica and Šumarice (3rd and 4th). The Missile-Technical Battalion was split, with part at Lazac and the rest in 'marching order' at Kamenica.[59]


RVI PVO FIGHTER AVIATION ORDER OF BATTLE
24 March 1999. godine
204
16
Mig-21
11
Mig-29
BEOGRAD
2
Mig-29
4
Mig-21
2
Mig-29
2
Mig-29
2
Mig-21
83
10
Mig-21
10
Mig-21
2
Mig-21
1
Mig-29

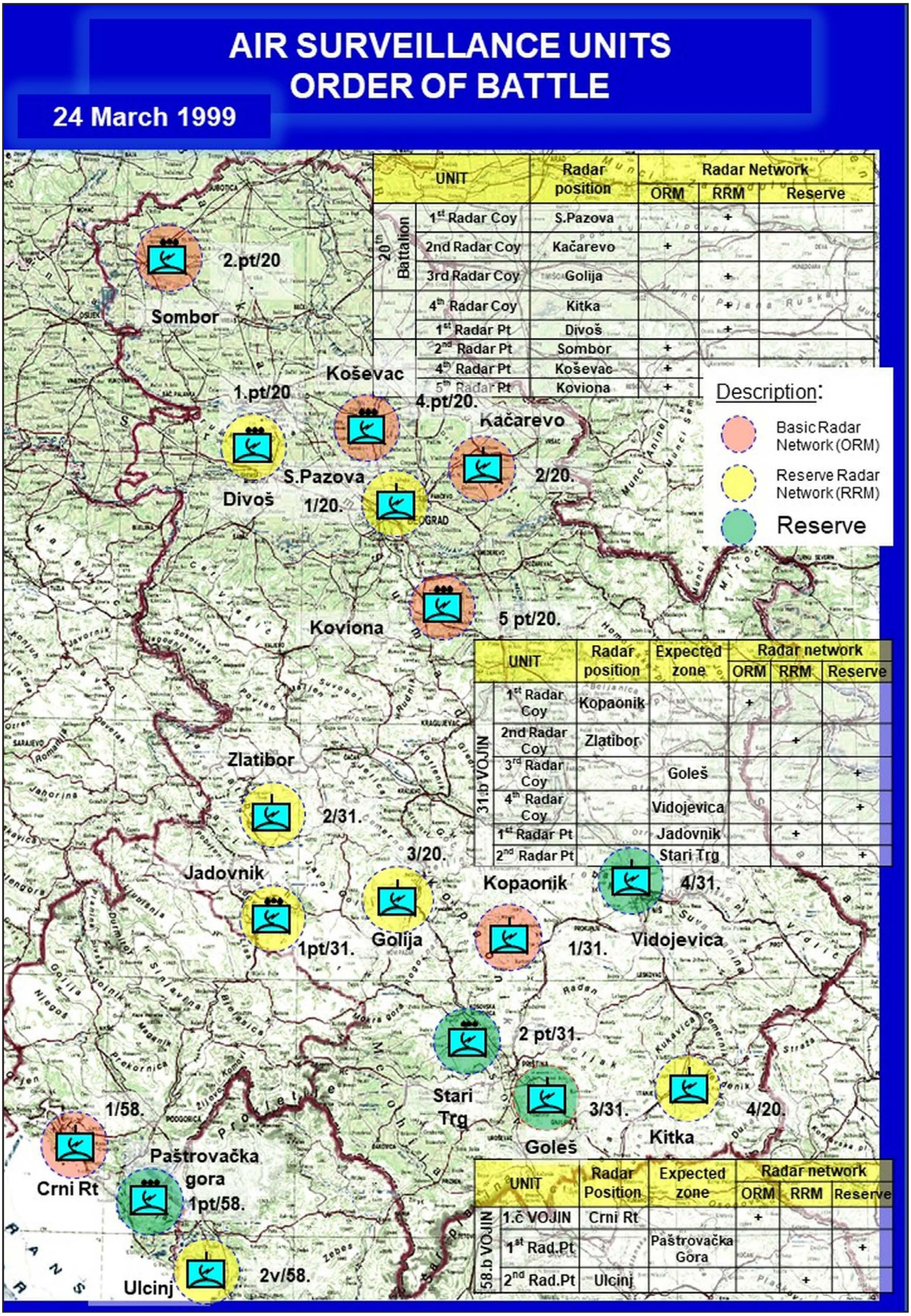
	Mig-29	Mig-29U
Batajnica	9	2
Niš	2	
Ponikve	2	
Podgorica	1	

	Mig-21	
Batajnica	16	
Niš	2	
Ponikve	4	
Priština	20	
Podgorica	2	

The RV i PVO fighter aviation order of battle on the late afternoon of 24 March 1999. (Jovica Draganić)


ORDER OF BATTLE MISSILE UNITS OF RV i PVO
24 March 1999.
arbr PVO
240.srp PVO
arbr PVO
lap PVO
arbr PVO
BEOGRAD
250.rbr PVO
arbr PVO
310.srp PVO
450.rp PVO
230.srp PVO
arbr PVO
60.srp PVO
arbr PVO
arbr PVO
lap PVO
311.srp PVO

Operational deployment of the RV i PVO missile air defence units on the afternoon of 24 March 1999. (Jovica Draganić)



AIR SURVEILLANCE UNITS
ORDER OF BATTLE

24 March 1999

UNIT		Radar position	Radar Network		
			ORM	RRM	Reserve
20th Battalion	1st Radar Coy	S.Pazova		+	
	2nd Radar Coy	Kačarevo	+		
	3rd Radar Coy	Golija		+	
	4th Radar Coy	Kitka		+	
	1st Radar Pt	Divoš		+	
	2nd Radar Pt	Sombor	+		
	4th Radar Pt	Koševac	+		
	5th Radar Pt	Koviona	+		

Description:

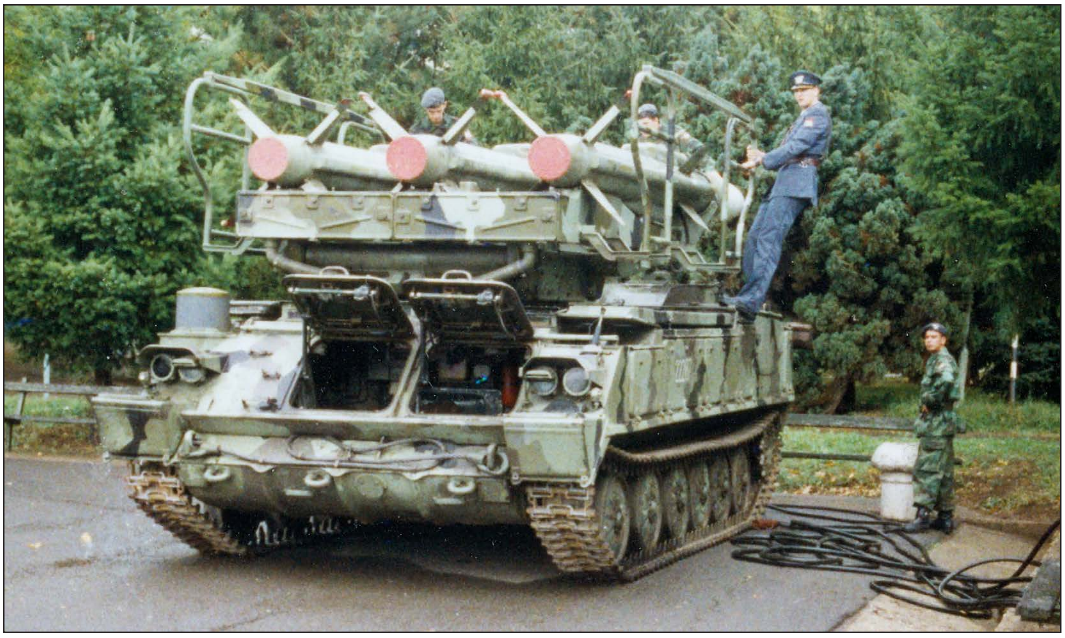
- 🟠 Basic Radar Network (ORM)
- 🟡 Reserve Radar Network (RRM)
- 🟢 Reserve

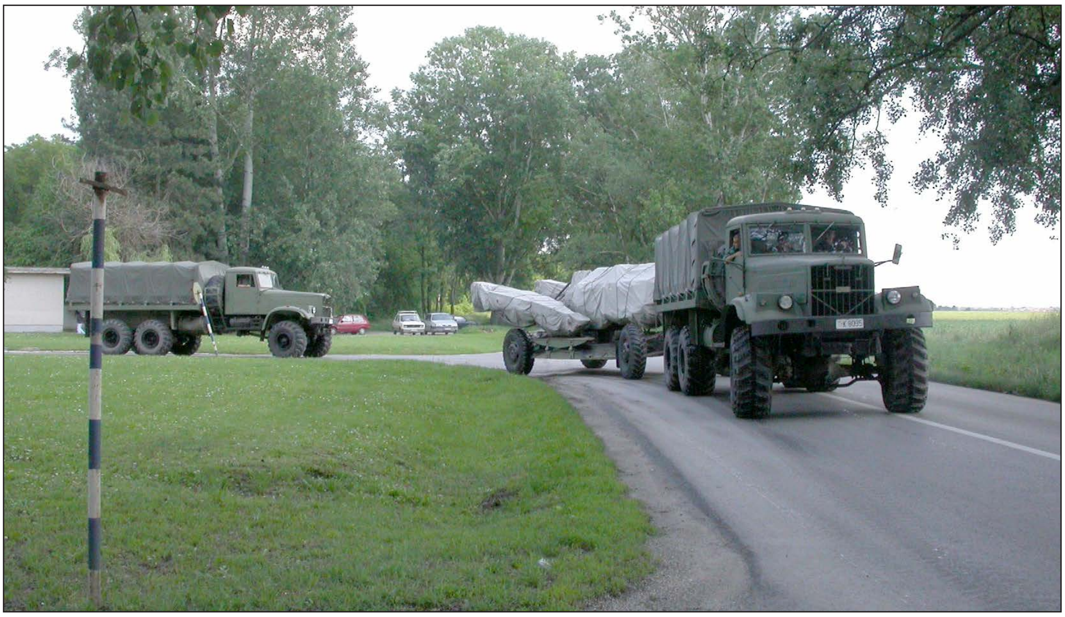
UNIT		Radar position	Expected zone	Radar network		
				ORM	RRM	Reserve
31.b VOJIN	1st Radar Coy	Kopaonik		+		
	2nd Radar Coy	Zlatibor			+	
	3rd Radar Coy		Goleš			+
	4th Radar Coy		Vidojevica			+
	1st Radar Pt		Jadovnik		+	
	2nd Radar Pt		Stari Trg			+

UNIT		Radar Position	Expected zone	Radar network		
				ORM	RRM	Reserve
58.b VOJIN	1.č VOJIN	Crni Rt		+		
	1st Rad.Pt		Paštrovačka Gora			+
	2nd Rad.Pt	Ulcinj			+	

2.pt/20
Sombor
1.pt/20
Koševac
4.pt/20.
Kačarevo
S.Pazova
Divoš
1/20.
2/20.
BEOGRAD
5 pt/20.
Koviona
Zlatibor
2/31.
3/20.
Jadovnik
Kopaonik
4/31.
1pt/31.
Golija
1/31.
Vidojevica
2 pt/31.
Stari Trg
3/31.
4/20.
Goleš
Kitka
1/58.
Crni Rt
Paštrovačka gora
1pt/58.
Ulcinj
2v/58.

Operational deployment of the RV i PVO air surveillance units on the afternoon of 24 March 1999. (Jovica Draganić)


One of the Kub-M (SA-6) launching vehicles of the Niš-based 230th Self-Propelled Air Defence Missile Regiment, seen prior to leaving the barracks to be deployed in the wider Niš area. (B. Dimitrijević)


Powerful Soviet Kraz 255B lorries towing launchers and other equipment of the 1st Missile Battalion out of Batajnica Air Base. This battalion remained on vehicles during the first night of Operation Allied Force. (250.rbr PVO)

On the morning of 24 March, the RV i PVO HQ ordered that fighter units should deploy some of their MiG fighters away from their home bases, according to previously arranged plans:

- 204th Fighter Regiment at Batajnica: two MiG-29s to Niš and Ponikve and one MiG-29 to Podgorica. All belonged to No. 127 Fighter Squadron. Other assets remained at the home base.
- 83rd Fighter Regiment at Priština: four MiG-21bis to Sjenica and two each to Podgorica, Niš and Ponikve. Pilots and fighters were mixed from Nos 123 and 124 Squadrons. Other pilots and aircraft remained in Priština.
- 98th Fighter-Bomber Regiment with HQ at Ladjevci deployed eight of its J-22 Oraos from No. 252 Fighter-Bomber Squadron at Batajnica to Ponikve. Other Oraos and Super Galebs remained at Ladjevci or Batajnica, depending on the squadron to which they belonged (Nos 241 and 252).
- 172nd Aviation Brigade at Golubovci: 10 Galeb G-4s from No. 229 Fighter-Bomber Squadron deployed to Niš Air Base. Other squadrons remained at Golubovci (aircraft) and the old grass strip airport near Podgorica (helicopters). The III Detachment/251st Fighter-Bomber Squadron, with piston Utva 75s, was at Kovin Air Base in southern Banat.

Five Kub-equipped self-propelled missile air defence regiments were moved from their peacetime positions, widely scattered and at different levels of combat readiness:

- 60th Regiment: HQ at Danilovgrad barracks, four batteries at Ćemovsko Polje, Golubovci Air Base, the Luštica peninsula and Podgorica.
- 230th Regiment: HQ moved from Niš to Kalać Brdo, four batteries at Lisinac, Kremeneac, Ćamurlije and Znojnice.
- 240th Regiment: HQ moved from Novi Sad to out of the city with one battery, two batteries at Kisač and one at Futog.
- 310th Regiment: HQ moved from Kragujevac to Tromić, four batteries at Divostin, Sjenica Air Base, Ponikve Air Base and Masići.
- 311th Regiment: HQ moved from Priština to Belaćevac with one battery, three other batteries at Obilić, Gračanica and Gornje Dobrovo.[60]

These flights were carried out in radio silence and flying at low level. At 1200 hours, a singe An-26 transport carried the ground crew of the 204th Regiment to Podgorica. Below this An-26, in its radar shadow, a MiG-29 reached Podgorica. The An-26 returned via Niš and Ponikve, from where it ferried the ground crew personnel. Two MiG-29s then took off from Niš and landed at Ponikve. Six airworthy MiG-29s and five others declared 'out of service' remained at Batajnica. At 1420 hours, two MiG-29s were placed at the highest state of combat readiness. A total of 19 MiG-21s were dispersed in groups all over Batajnica Air Base. Ground crew and other personnel went to civilian premises in a nearby village.[61]

The 83rd Fighter Regiment also deployed its MiG-21bis during the early afternoon, the first to Podgorica at 1425 hours and the last to Niš at 1455 hours. On the same morning, the ground crew teams were deployed by An-26 to air bases to await the arrival of their

MiGs. At Priština Air Base, a total of 20 MiG-21bis and six MiG-21UMs remained. Apart from four MiGs in QRA, all the others were taken into the underground Rudnik complex.[62]

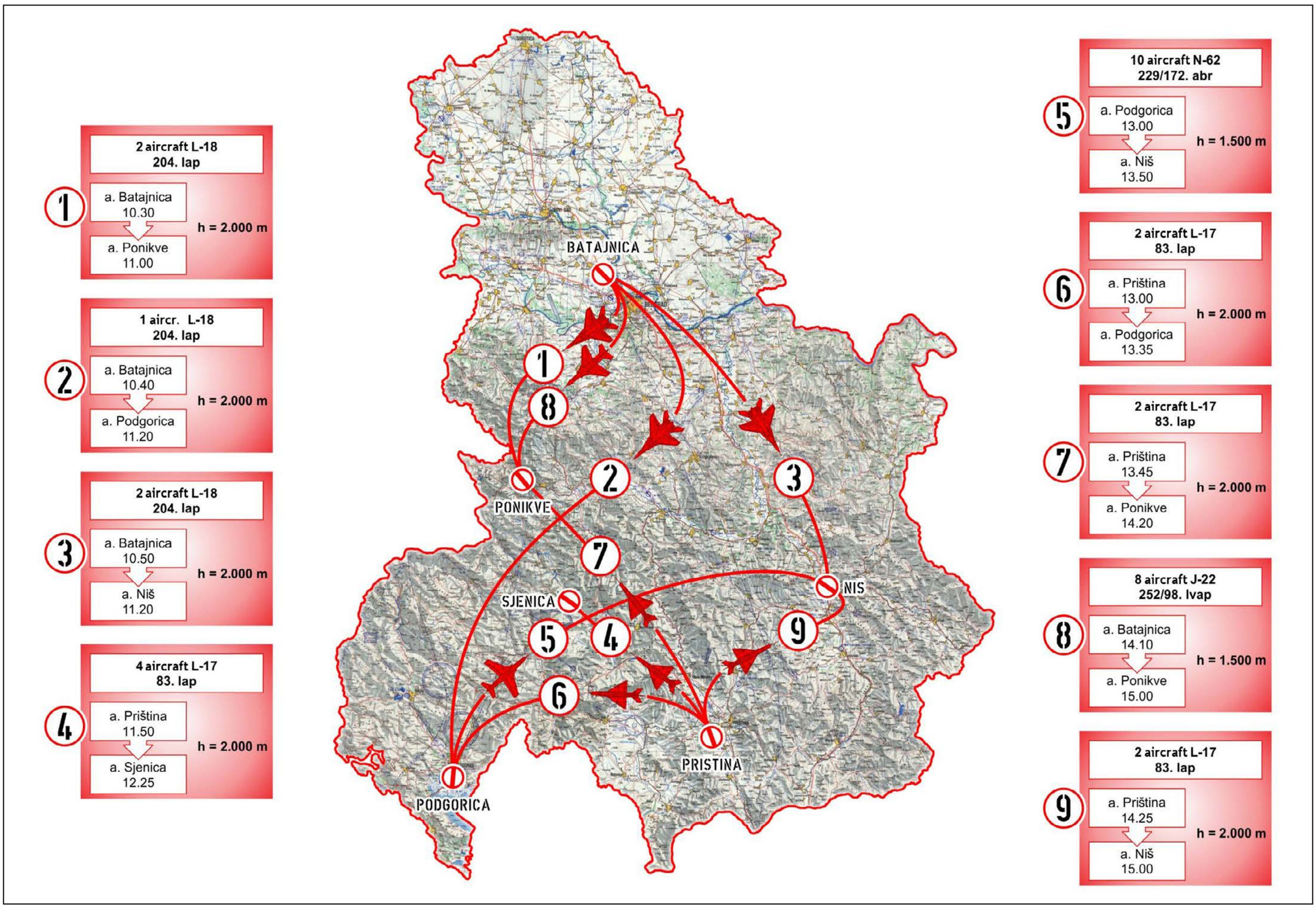
With this deployment, the RV i PVO established mixed fighter detachments from both fighter regiments in four air bases (not counting their home bases of Batajnica and Priština):

- at Niš: two MiG-29s plus two MiG-21bis;
- at Ponikve: two MiG-29s plus two MiG-21bis;
- at Podgorica: one MiG-29 plus two MiG-21bis;
- at Sjenica: only four MiG-21bis.

None of the deployed groups was given any particular task in the planned operations. They were ordered to report to the senior commander at the air base and to wait further orders. All four detachments were commanded by the MiG-29 pilots from the 204th Regiment, who were older and more experienced than the MiG-21 pilots from the 83rd Regiment. They were mostly younger pilots, captains who had finished their academy training between 1989 and 1993. Some of them had combat experience from 1991-92, while others only had live firing exercise experience. A few of them had never landed before on the air bases where they were deployed. Contrary to the MiG-29 teams, which came with replacement pilots, the MiG-21 pilots did not have any replacements. Each group only had technicians sufficient for basic maintenance (in RV i PVO parlance, 'First level'). On the afternoon of 24 March, all of the deployed MiG detachments were at the highest state of combat readiness, waiting to get airborne and intercept the expected NATO strike packages.[63]

Helicopter units were much easier to move out of their home bases. They mostly remained in the vicinity of their home bases: the 890th Mixed Helicopter Squadron from Batajnica moved and camouflaged its Mi-8 and Gazelle helicopters to the wider Srem area. The 119th Helicopter Regiment, based at Niš, deployed its squadrons as follows: the 712th Anti-Tank Helicopter Squadron was deployed to the south-east suburbs in the Morina–Kutina area; the 714th Anti-Tank Helicopter Squadron moved from its Ladjevci home base to Bumbarevo Brdo near Knić (later, on 21-22 April, it moved to Žitni Potok near Prokuplje in southern Serbia); and the 787th Transport Squadron moved to the Oblačino–Krajkovac area, west of Niš. The regimental HQ abandoned the air base on 27 March and settled in a nearby village.[64]

During the afternoon, all civil flights over the Adriatic Sea towards Albania, FR Yugoslavia and Croatia were banned. The RV i PVO 280th ELINT Centre registered the sudden enlargement of activities among NATO air and naval forces. At 1748 hours, a change of call-signs and working frequencies was ordered. Measures for protection of radio communications and radio silence were also noted. At 1800 hours, an ABCCC (Airborne Battlefield Command and Control Centre), four AWACS, two tankers and an unidentified group of combat aircraft was registered at the edges of Yugoslav air space. Upon receiving this information, the RV i PVO HQ issued an 'air alert' signal to all aviation units at 1840 hours.[65] Ten minutes later, all of the RV i PVO HQs and units were at operational centres or their command posts, waiting for the NATO strike formations to show up on their radar screens.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3
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a. Niš
11.20
h = 2.000 m
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a. Priština
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a. Sjenica
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h = 2.000 m
BATAJNICA
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SJENICA
NIS
PODGORICA
PRISTINA
1
2
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8
9
10 aircraft N-62
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h = 2.000 m
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83. lap
7
a. Priština
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2 aircraft L-17
83. lap
9
a. Priština
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a. Niš
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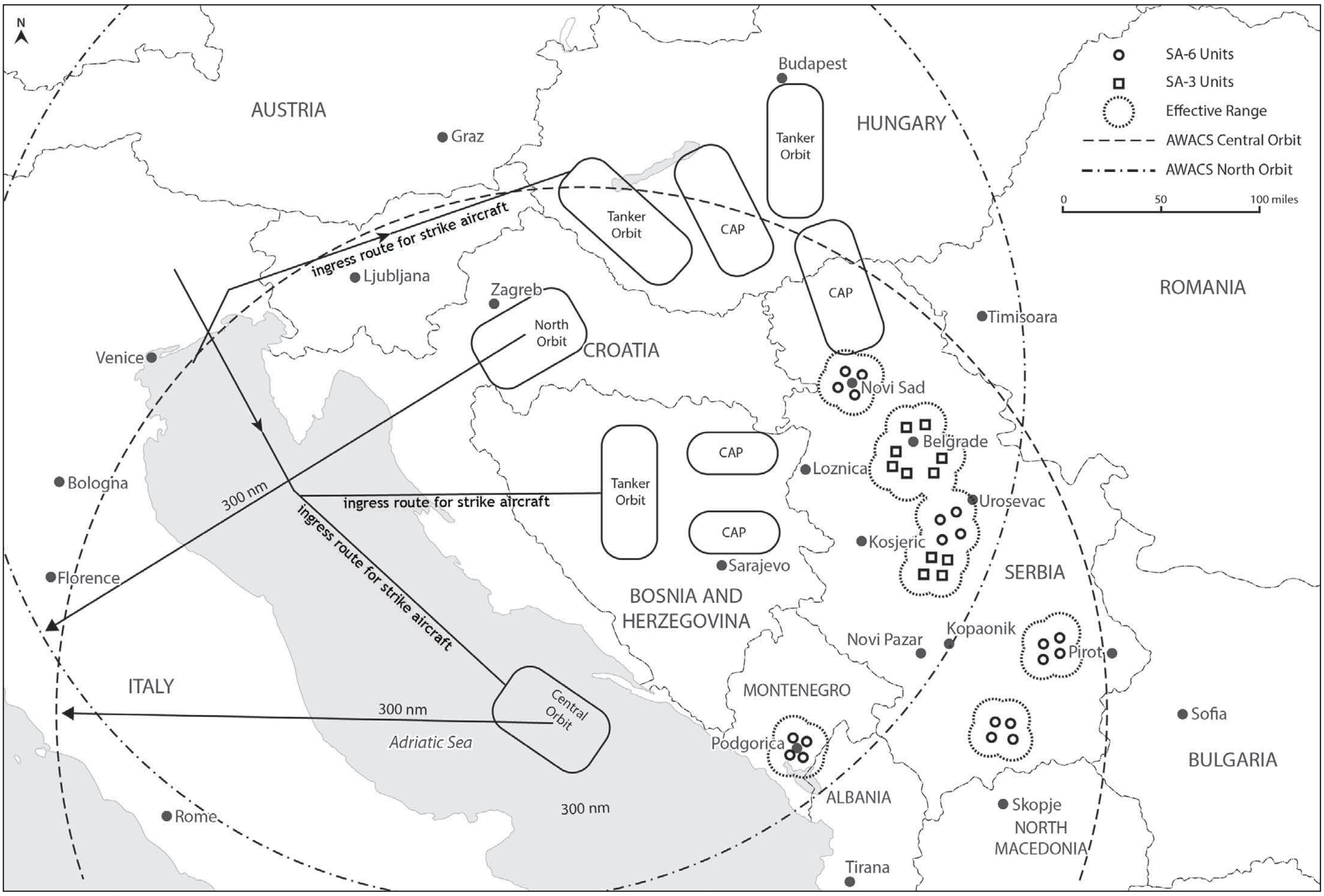
h = 2.000 m

Operational deployment of the RV i PVO combat aviation units between 1030 and 1500 hours on 24 March 1999. (Jovica Draganić)


N
AUSTRIA
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ingress route for strike aircraft
Tanker Orbit
CAP
CAP
Ljubljana
Zagreb
ROMANIA
Timisoara
North Orbit
CROATIA
Venice
Novi Sad
Belgrade
CAP
Loznica
Bologna
300 nm
ingress route for strike aircraft
Tanker Orbit
Urosevac
CAP
Kosjeric
ingress route for strike aircraft
Sarajevo
SERBIA
Florence
BOSNIA AND HERZEGOVINA
Novi Pazar
Kopaonik
Pirot
ITALY
MONTENEGRO
Central Orbit
300 nm
Sofia
Adriatic Sea
Podgorica
BULGARIA
ALBANIA
Rome
300 nm
Skopje
NORTH MACEDONIA
Tirana

A map depicting NATO's organisation of the battlefield early (late March/early April 1999) during Operation Allied Force. Note the two AWACS-orbits (North and Central), with two tanker-orbits over Hungary and one over Bosnia and Herzegovina. (Map by George Anderson)

President Clinton Outlines the Aims of Operation Allied Force

Nearly all Western diplomatic, political and even media sources reveal that US and NATO officials expected that the air campaign would last only a few days, even less than was the case with Operation Deliberate Force in Bosnia in September 1995, which continued for some 16 days with several pauses between air strikes. This notion was especially strong among the highest US officials, including Secretary of State Madeleine Albright.

Lieutenant General Michael Short, at that time Commander Allied Air Forces Southern Europe, later stressed that the politicians had only allowed him to bomb Yugoslavia for two or three nights. He explained that this was to be the period that Washington and its allies in NATO could manage politically until a final diplomatic move on Milošević. Accordingly, Short was sanctioned to attack only 90 targets on Yugoslav territory.

Prior to the start of Operation Allied Force, US President Bill Clinton gave a public address on the afternoon of 24 March (late evening in Europe). President Clinton stressed from the beginning of his speech that:

> Our armed forces joined our NATO allies in airstrikes against Serbian forces responsible for the brutality in Kosovo. We have acted with resolve for several reasons. We act to protect thousands of innocent people in Kosovo from a mounting military offensive. We act to prevent a wider war … The Serbian leaders, on the other hand, refused even to discuss key elements of the peace agreement. As the Kosovars were saying 'yes' to peace, Serbia stationed 40,000 troops in and around Kosovo in preparation for a major offensive and in clear violation of the commitments they had made. Now they've started moving from village to village, shelling civilians and torching their houses. We've seen innocent people taken from their homes, forced to kneel in the dirt and sprayed with bullets … Ending this tragedy is a moral imperative. It is also important to America's national interests. Take a look at this map. Kosovo is a small place, but it sits on a major fault line between Europe, Asia and the Middle East, at the meeting place of Islam and both the Western and Orthodox branches of Christianity.

Clinton pointed to the previous Bosnian example as the model for Operation Allied Force:

> We learned some of the same lessons in Bosnia just a few years ago … We must apply that lesson in Kosovo, before what happened in Bosnia, happens there, too … Our mission is clear – to demonstrate the seriousness of NATO's purpose so that the Serbian leaders understand the imperative of reversing course, to deter an even bloodier offensive against innocent civilians in Kosovo and, if necessary, to seriously damage the Serbian military's capacity to harm the people of Kosovo.[66]

Clinton's words can be taken as a definition of the aims of Allied Force.

Clinton expressed a wish that Milošević "will realize his present course is self-destructive and unsustainable. If he decides to accept the peace agreement and demilitarize Kosovo, NATO has agreed to help to implement it with a peacekeeping force." Clinton added that there was no intention to send ground forces into Kosovo: "I do not intend to put our troops in Kosovo to fight a war."[67] His words indirectly confirmed that there was a general notion within the US and its NATO allies that the air operation would be short and that it would not expand into full-scale war. The lack of the presence of the usual US Navy aircraft carrier confirms the political expectation that Allied Force would be a short campaign to force the Serbians (Yugoslavs) to return to the political process. Using the Holbrooke scenario which was witnessed in the case of Bosnia in September 1995, after a series of air strikes, the problem could be solved in the diplomatic field.

However, such hopeful estimations and expectations soon turned out to be wrong. There was no 'plan B' after the Yugoslav forces showed serious resistance and the first strikes did not land a decisive punch. Some authors believe that NATO did not actually attack one state or its army but attacked only one man: Milošević. He became a portrait of evil in Western media.

Despite President Clinton's address intending to be persuasive, the media soon raised a series of serious questions. What was the intention of NATO in the campaign? Was it the halting of Serbian repression? Was it to push the Serbs into peace talks and negotiations? Or was it the destruction of Serbian forces? Most of these questions remained unanswered in this stage of campaign.

3

ALLIED FORCE: FIRST NIGHT OF OPERATIONS

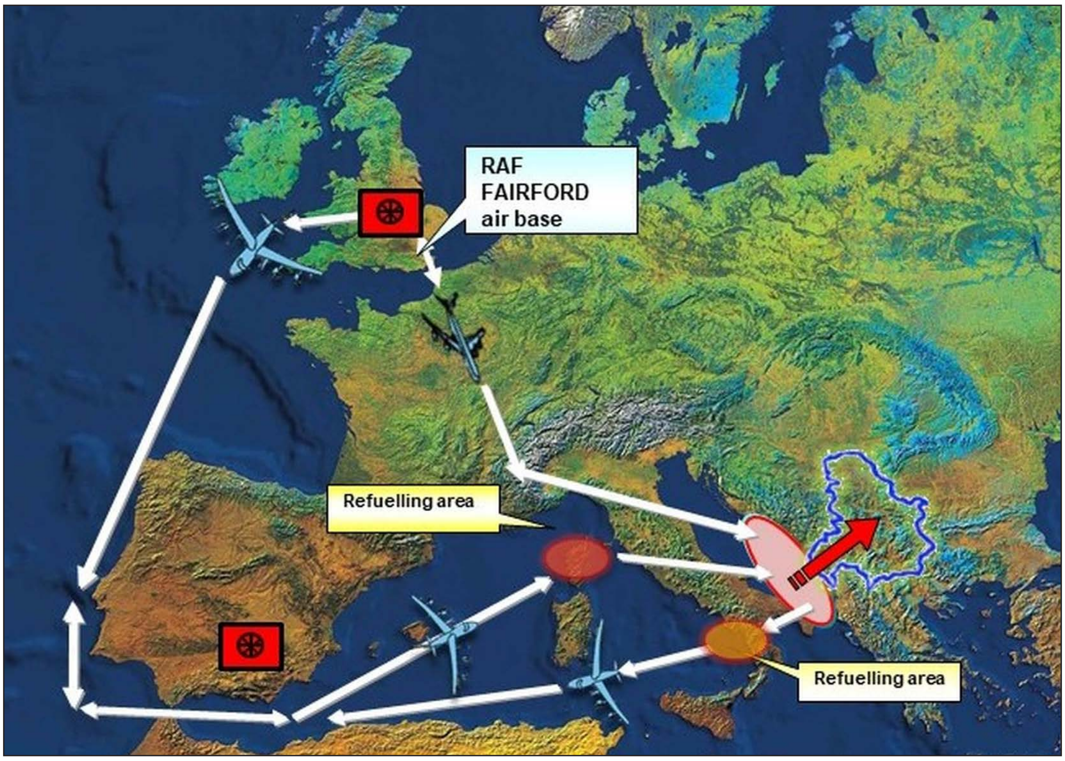
Strikes Commence

On the morning of 24 March, a pair of B-2A Spirit stealth bombers took off from Whiteman AFB in Missouri, United States and headed towards the Balkans. They belonged to the USAF 509th Bomber Wing. This was their first combat usage and a striking demonstration of the current USAF strategy: 'Global Reach – Global Power'. They would make aviation history by flying a round trip of more than 31 hours to strike Serbian targets. The B-2s carried loads of Joint Direct Attack Munitions (JDAM) – a guidance kit that converted unguided bombs, or 'dumb bombs', into all-weather precision guided munitions. As well as being the debut in combat for the B-2A bombers, it was also the first time that JDAM munitions had been employed.[1]

Meanwhile, at RAF Fairford in Gloucestershire in the UK, eight B-52Hs of the USAF 2nd Bomber Wing took off in the cloudy afternoon of the same day. The AP news agency reported: "The first plane took off at 10:42 a.m. (1042 GMT) followed at two-minute intervals by the rest." They were flying via Gibraltar, remaining in the wider Mediterranean air space, waiting for darkness and the signal to go into action. They carried AGM-86C ALCM (Air Launched Cruise Missiles), which they launched against static military targets in Yugoslavia. Along with the wave of TLAMs (Tomahawk missiles) launched from NATO ships in the Adriatic, they were the forerunners of the operation.[2]

Meanwhile, the bulk of the USAFE forces – supported by F-117A stealth fighters and USMC F/A-18 Hornets and EA-6B Prowlers – took off that evening from Aviano. From other Italian air bases, the NATO allies launched their own aircraft into action: RAF Harrier GR.7s, RCAF and Spanish F/A-18 Hornets, German Tornados, RNLAF F-16MLUs, Italian Tornado IDS-HARMs and French ALA Mirage 2000s. These created the first waves of the Allied forces that entered Yugoslav air space that night.[3]

At 1930 hours on 24 March, the RV i PVO's 280th ELINT Centre registered the first USAF strike package in Albanian air space. These were identified as two EA-6B Prowlers, followed by four F-15s or F-16s. Eleven minutes later, the first cruise missiles launched from US Navy and Royal Navy ships and submarines in the Adriatic hit selected targets in Yugoslavia. At 1945 hours, the sole USAF U-2 which orbited over Kosovo left FRY air space. NATO strike packages then started to enter Yugoslav air space.[4] At 2000 hours, the Yugoslav government declared a state of war already existed "since the



Reconstruction of the initial B-52H missions on 24 March 1999, based upon the monitoring of radio communications by the 280th ELINT Centre of the RV i PVO. (Jovica Draganić)

Loading of ALCM cruise missiles into a B-52H Stratofortress belonging to the 5th Bomber Wing based at Minot AFB, seen here at RAF Fairford prior to taking off to attack targets in Yugoslavia. (DoD)

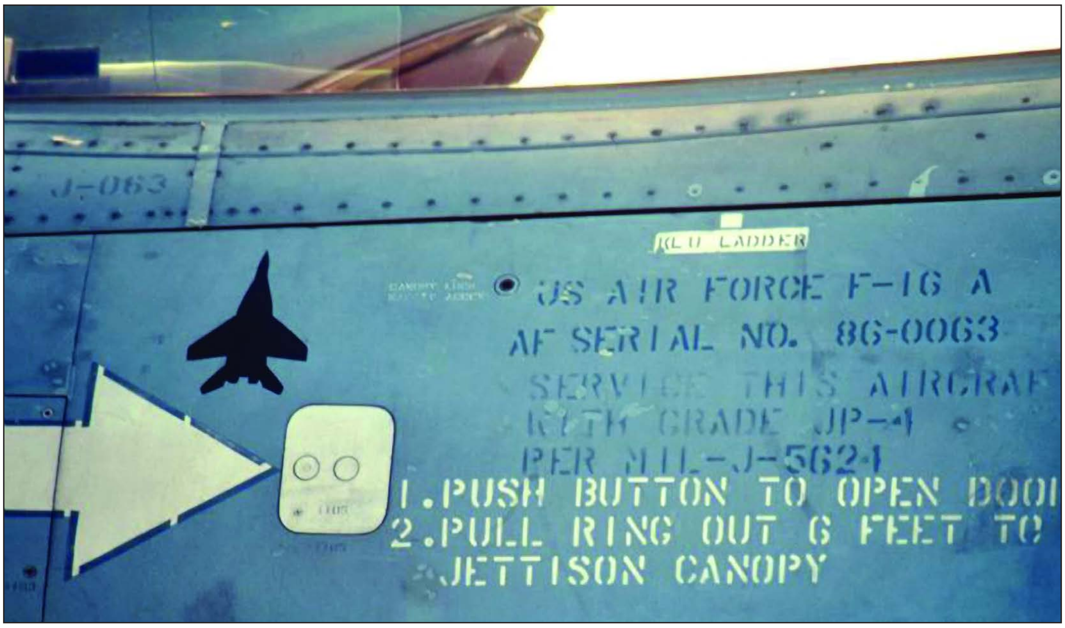
US Navy ships in the Adriatic Sea launching cruise missiles at around 1930 hours on 24 March marked the beginning of Operation Allied Force. (DoD)

aggression had started." The last European war of the 20th century had begun.

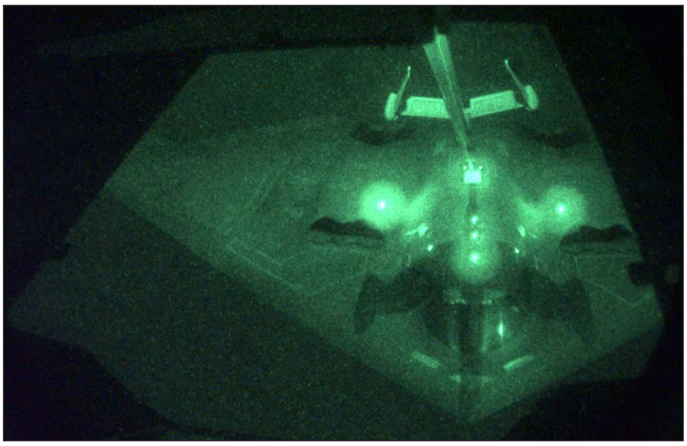
There were two main waves of air strikes that night. The first wave started at 1941 hours and continued until midnight, while the other lasted from 0100 to 0330 hours on the morning of 25 March. Although expected, the first strikes were a psychological challenge for Yugoslav Air Force personnel. Lieutenant Staniša Todorov of the RV i PVO's 450th Regiment explained:

> The first cruise missile overflew the firing position at Preljina. We felt a very intense smell. According to the experiences of NATO attacks in Republika Srpska, it was clear that air attacks had commenced. But, still in our mind we hoped that we were overflown by our MiG-21s, as was the case a couple of hours before. Soon, an explosion cut the uncertainty.[5]

One of the 'Knights' takes off from Batajnica Air Base. This is MiG-29, No. 18104, which had earlier taken off from Niš Air Base, being damaged, but landed safely back at Niš. It survived Allied Force. (M. Micevski)



The symbol of the claimed RV i PVO MiG-29 brought down during the initial air combat on the night of 24 March 1999, seen on RNLAF F-16A, serial J-063.



View from the boom operator's position on a KC-10 Extender. A B-2A refuels from a KC-10 after completing a mission in support of NATO's Operation Allied Force. (National Archives Catalogue)

Yugoslav MiG-29s Attempt to Challenge the NATO Strike Packages

As mentioned previously, RV i PVO fighters were deployed at several air bases, maintaining QRA status until the appearance of the first NATO strike packages. There were only a handful of MiG-29s facing the Allied fighters that night, but they were easily wiped from the sky. What follows is an account of this unequal encounter.

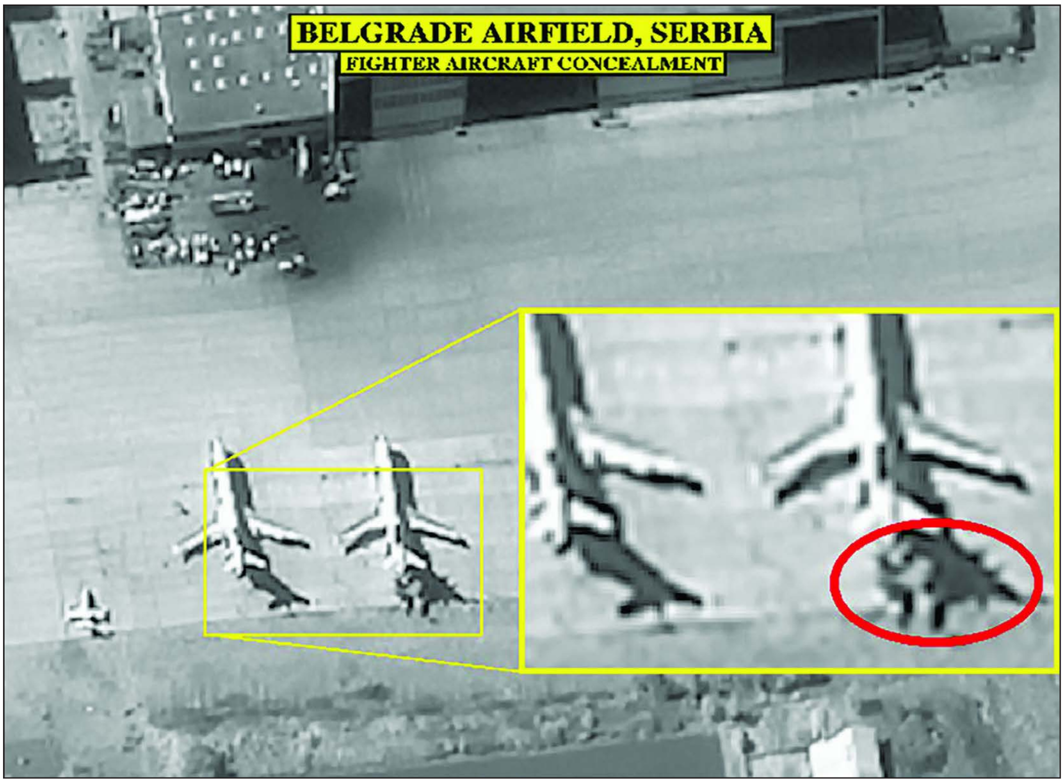
At 1950 hours, a single MiG-29 was alerted and took off from Niš Air Base. Pilot Major Iljo Arizanov, in the cockpit of this MiG (serial 18112), was directed over Kosovo to patrol between Djakovica and Suva Reka at 3,000 metres. Soon after, signals from Arizanov's aircraft ceased. Two days later, a Yugoslav Army unit found him; he had been trekking through Kosovo and hiding from hostile forces since his MiG was brought down. Arizanov later explained that his radio had failed and the SPO-15 radar warning receiver in his MiG was unserviceable. He had tried to 'lock' a target or group of targets which he identified on his radar, but at 2020 hours his MiG was struck in the rear. He managed to bail out.

At 2012 hours, another MiG-29 (serial 18104), with Major Dragan Ilić on board, was launched from Niš and directed to patrol over the Metohija border region towards Albanian air space at 3,000 metres. He received warnings of several distant aerial targets, then his MiG was hit and damaged while climbing to 4,500 metres. However, Ilić managed to return to base and land safely at 2042 hours.

Meanwhile, at the main Yugoslav fighter hub, Batajnica Air Base, ground crews of the 126th Squadron started to set tyres and timber on fire at 2011 hours to produce a protective smoke screen against expected air strikes and cruise missile attacks. At 2030 hours, the operations centre of the Air Defence Corps ordered two MiG-29s into the air. At 2037 hours, Major Nikolic took off in his MiG (serial 18111), heading north towards the town of Bečej, but discovered that his radar and missile guidance system were inoperative. At 2040 hours, while climbing, Nikolic was hit at 3,000 metres over the Titel–Knićanin area but managed to eject from his stricken fighter.

Major Nikolic signalled for help from the crash site, and at 2100 hours a SAR Gazelle helicopter from the 890th Squadron, with Major Milanovic and Captain Jovanovic aboard, was sent to rescue him. In spite of ongoing strikes against Batajnica, they managed to take off, and keeping at low altitude discovered the stricken pilot and returned to a by now blazing Batajnica with lights out at 2220 hours to complete a daring and bold, but successful SAR mission.

The next pilot to get airborne was Major Ljubiša Kulačin in the MiG-29 serial 18105. He took off at 2040 hours and headed north, climbing to some 3,000 metres. Kulačin also discovered that his radar was not operating. He spent about 20 minutes trying to bring his radar and other systems back into service. The Serbian pilot patrolled in the area around Bečej but realising that his aircraft's radar could not be fixed, he decided to return to base. However, Batajnica was by this time covered with smoke and fire from the NATO air strikes, so Major Kulačin proceeded instead to Belgrade International Airport, where he landed safely. His MiG remained parked among civil airliners until the end of hostilities.



The MiG-29, serial 18105, of Major Kulačin which landed at Belgrade airport during the first night of Operation Allied Force, seen in a satellite photo, hidden in the shadow of a civilian Boeing 727. (USAF/DoD)

A search and rescue party of the 83rd Fighter Regiment at Priština Air Base was organised, comprising a couple of MiG-21 pilots, technicians and conscript soldiers. (Milos Nikša)

The fifth 'Knight' to get airborne that night was Major Predrag Milutinović (known as '*Grof*', Count), who was in a detachment at Ponikve Air Base. At 2040 hours, the signal was given, "All in the air!" The commander of the 127th Squadron, Lieutenant Colonel Nebojsa Djukanović ('Djoka'), ordered two of his MiG-29s and one MiG-21bis to take off and face the enemy. The first to enter the runway was Major Milutinović, followed by Djukanović, both in MiG-29s. The third in line was the MiG-21bis with Captain Saša Oluić ('*Oluja*', Stormy). Soon after, at 2045 hours, Milutinović took off in his MiG, serial 18106. Djukanović's ground crew was a bit slower and they halted Oluić's MiG-21 to pass to the taxiway. He then had to wait for Djukanović to start rolling to the runway. When the two pilots were on the runway, they were halted by a voice from the 31st OCS at Kraljevo, the same centre which had ordered the combat alert only minutes before. The order was now given that no MiG-21 should take off. Hearing this, both pilots stopped and returned to the apron.[6]

Captain Oluić was the MiG-21 pilot who got the closest to being airborne on the night of 24 March. All the others remained on the ground. At Priština, pilots of 83rd Regiment which were in QRA were sitting in their cockpits, headed by Colonel Urošević, CO of the regiment, but the order to take off was never issued.

What had happened? The moment the campaign had started, General Smiljanić had banned the use of MiG-21s to intercept the NATO formations. In his memoirs, he stated that most of the RV i PVO personnel understood this decision. But previous RV i PVO commander General Ljubiša Veličković, also a MiG-21/29 pilot and an ardent NATO opponent, was strongly against this decision. Veličković, who was then assistant to the Minster of Defence, openly disagreed with the decision, and complained about it in the highest political and military circles. Eventually, President Milošević summoned General Smiljanić to his quarters on 15 April, asking him to explain his decision to ground the MiG-21 fleet. Smiljanić explained that he felt it most likely that none of the MiG-21s which would have faced the NATO strike packages could have avoided being brought down. He said that such a result would have been a tremendous propaganda boost for NATO. Milošević, listening carefully, agreed with Smiljanić's decision. Thus, all RV i PVO MiG-21s remained grounded. General Veličković continued to comment on this decision until 4 May, when the commander of the 204th Regiment, Colonel Milenko Pavlovic, flying a MiG-29, was shot down and killed by F-16CJs of the USAF's 78th EFS over the city of Valjevo. Veličković thereafter approached Smiljanić and apologised for insisting on the use of MiG-21s against NATO forces.[7]

Heading towards Kosovo to face the second wave of NATO strikes, Major 'Grof' Milutinović continued his interception sortie. He too soon discovered that his radar was not functioning and that he was unable to establish radio contact with the operations centre. 'Grof' received two warnings from his RWR (Radar Warning Receiver), after which he decided to land at the nearby Ladjevci Air Base. However, the base was in complete darkness since all of the lights were out. When he finally established radio communication, Milutinović was ordered to proceed to Niš and land there. However, when 1,800 metres above Ribarska Banja on Mount Jastrebac, he was hit by what he thought was ground fire. 'Grof' ejected safely, and once on the ground was rescued by some locals. During the early morning hours, he reported to his unit from hospital in the nearby city of Kruševac.

Back at Batajnica, the first NATO strike occurred around 2040 hours, despite two MiG-29s being launched against the attackers. Several PGMs (Precision Guided Munitions) started to hit the Hardened Aircraft Shelters and other targets at the base. The attacks continued until 0400 hours on the morning of 25 March. One MiG-21 was destroyed in a HAS, while another two were damaged on the apron. All the stored ammunition and spare missiles of the 126th Squadron were destroyed in another HAS.[8]

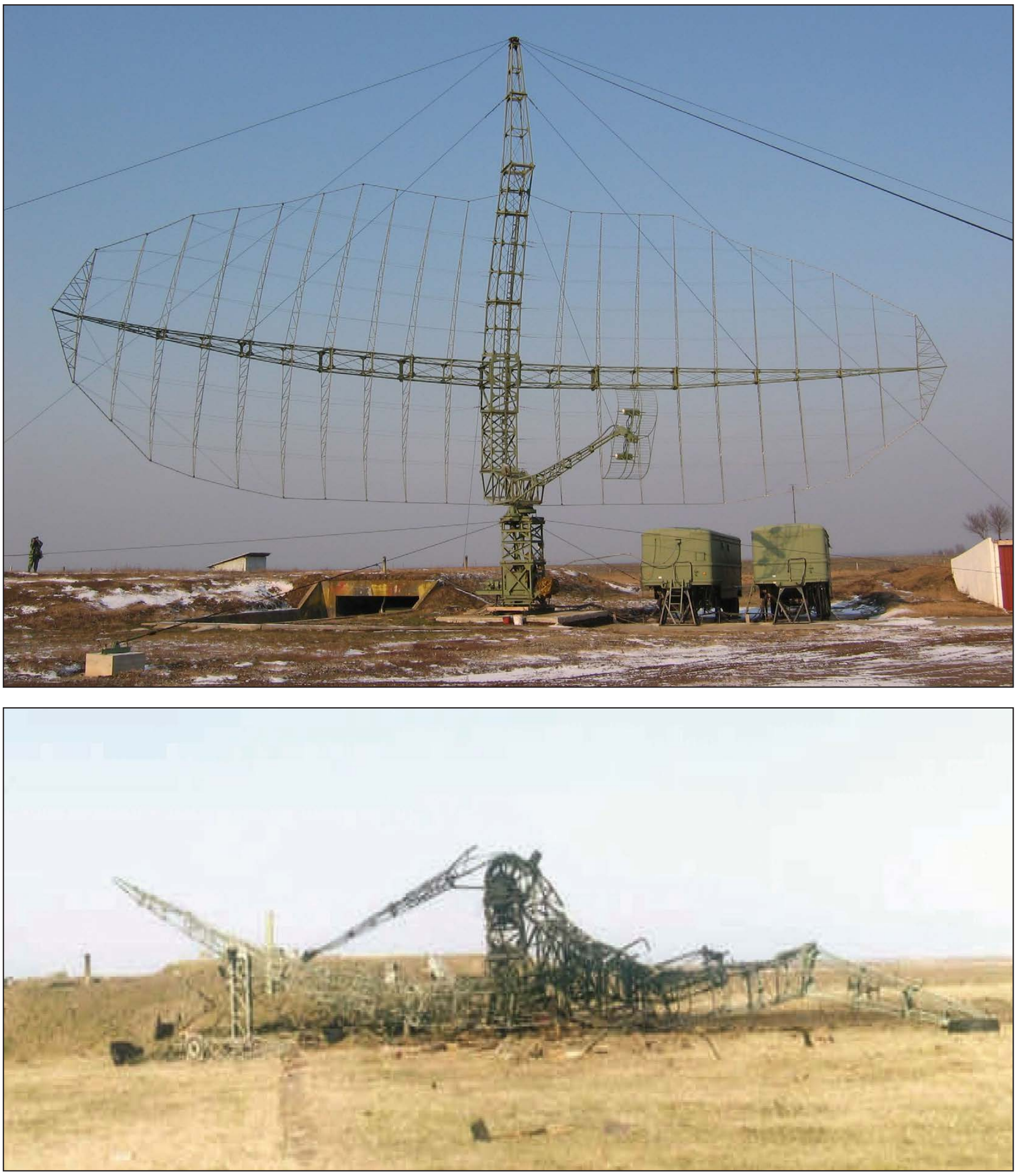
Three NATO pilots were credited with aerial victories during the first night of the operation: two USAF flyers and one from the RNLAF. Two USAF F-15C pilots of the 493rd Expeditionary Fighter Squadron each shot down one MiG-29, using AIM-120 missiles. Captain Mike 'Dozer' Shower, in the F-15C serialled 86-0169, led the package of four F-15Cs belonging to the 493rd FS and four F-16CJ – all of which carried HARM missiles. When one MiG-29 appeared, Shower fired an AIM-120 and another AIM-7 to increase the probability of the 'kill'. He claimed the MiG-29 flown by Major Nebojsa Nikolic with another AIM-20, at which he shouted "Splash" over his radio.[9] The other pilot who claimed a Yugoslav MiG-29 was Lieutenant Colonel Cesar 'Rico' Rodriguez, flying the F-15C serialled 86-0169. He shot down Iljo Arizanov's MiG over Kosovo. Rodriguez later became known as 'The Last Ace' of the USAF, having previously shot down two Iraqi MiGs in the Gulf War of 1991.[10]

Paradoxically, from 1952-1953, several groups of Yugoslav pilots – most of them from the same 204th Fighter Regiment that would incur such losses in Operation Allied Force – had been trained to fly jets (T-33s and F-84Gs) with the 48th Fighter Wing at Fürstenfeldbrück and Chaumnot air bases. Less than five decades later, their 'sons' would clash above Serbia. Yet in the late 1990s, it seems nobody remembered that old alliance from the Cold War era.

A detachment of four Dutch F-16s took off from Amendola Air Base that evening to provide fighter cover for a USAFE strike package. After refuelling over the Adriatic, they entered Yugoslav air space, but were soon alerted by AWACS that three Yugoslav MiGs were taking off from Batajnica. One of them – that of 'Grof' Milutonović – was soon on the radars of the Dutch fighters. Pilot Major Peter 'Wobble' Tankik, from the second pair, launched an AMRAAM missile and 30 seconds later the Yugoslav MiG disappeared from the screen. Tankik's RNLAF F-16MLU was serialled J-063 and belonged to 322nd Squadron.

BEOGRAD-JAKOVO SA-3 SAM SITE, SERBIA
PRE STRIKE

Pre-strike aerial photo of the 3rd Missile Battalion firing positions at Jakovo Barracks, north-west of Belgrade. The unit abandoned this position, which was targeted in the early days of Operation Allied Force. (USAF/DoD)



Long-range Soviet P-14 (NATO, 'Tall King') radar position at Kačarevo in southern Banat, seen before and after an attack during the first night of Allied Force. (Komanda RV i PVO)

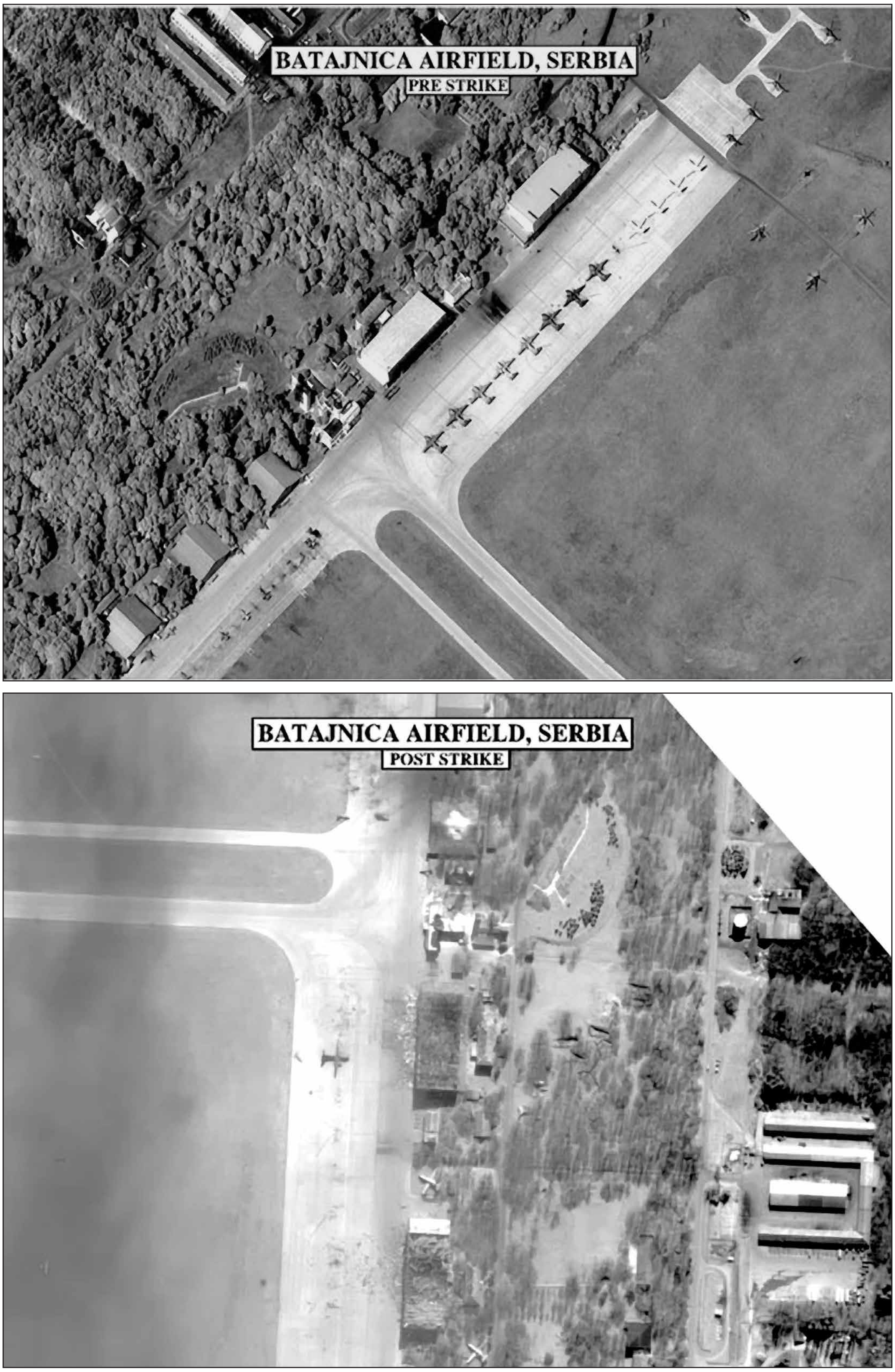
At the same time that the first air attacks were being carried out, the Chief of Staff of the Yugoslav Air Defence Corps, General Nikola Grujin, ordered that eight MiGs from the 83rd Regiment should be taken out from the underground complex at Priština Air Base and deployed outside on the aprons. The RV i PVO senior leadership feared that air strikes may hit the entrances to the underground complex and thus prevent the fighters in it from being engaged in further combat. Nearly two hours later, several Tomahawk missiles missed the entrances but hit the sloped sides of the complex, blocking the southern entrance with masses of earth and stones. The blockage was removed by bulldozers during the following days.[11]

During the first night of Allied Force, the RV i PVO lost three MiG-29s and one further example was damaged. The RV i PVO attributed two of the shooting-downs to the USAFE, one to the RNLAF and one to its own air defence unit. One pilot was missing.

Commenting upon the first claims by NATO strike packages that night, General Clark wrote that he was surprised by Secretary General Xavier Solana's reaction. Upon hearing the news, Solana had shouted: "That is no good! That is no good!" He explained to a puzzled Clark that he feared the conflict would now be a protracted one, since the aerial combat had proved that the Serbs intended to defend themselves, and even to fight back.[12] Solana said the loss of

The main operations centre was that of the Korpus PVO at the underground '909' complex at Straževica in the southern suburbs of Belgrade. It remained operational through the whole duration of Allied Force thanks to its underground position at the bottom of a hill, surrounded by civilian estates. (MCO)

A destroyed HAS at Batajnica with the MiG-21bis serialled 17220, which was parked inside in QRA status. A nearby auxiliary power vehicle known as an 'APA' was also destroyed on the night of 24 March. (204.lap)



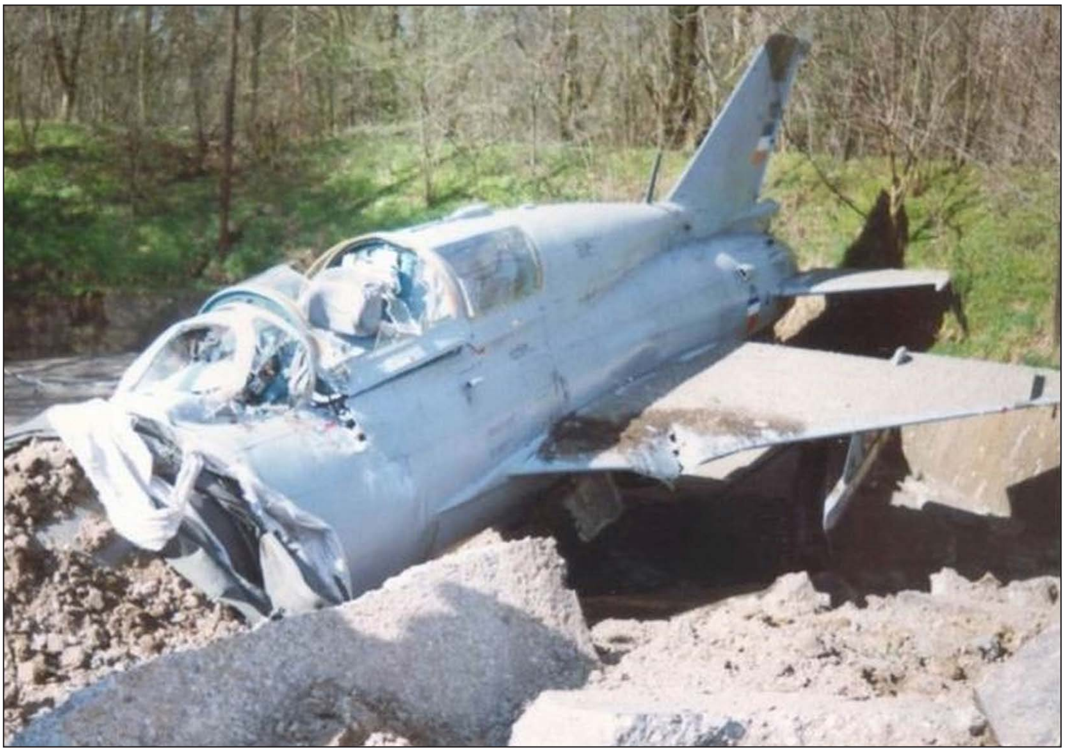
The main ramp of Batajnica Air Base, seen before and after the strikes. Nearly all of the hangars in the photo were destroyed and some of the aircraft were dispersed below the ruins of the base. (USAF/DoD)

their fighters would drag the Serbs deeper into the conflict; and he was right.

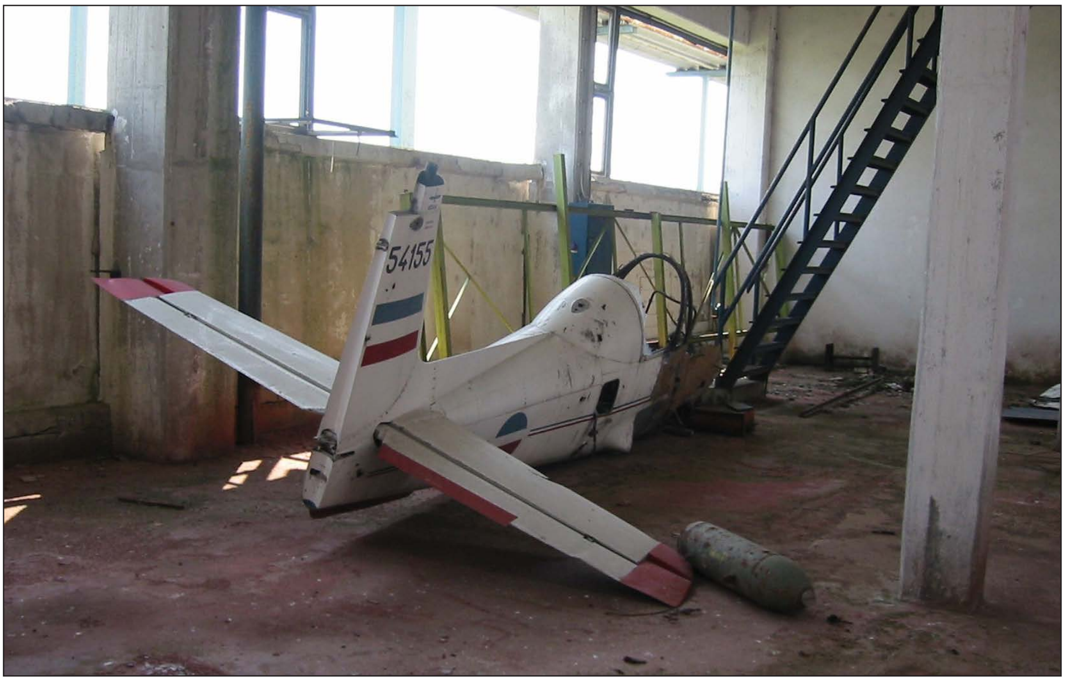
Outcome of the Attacks During the First Night of Allied Force

According to the estimations of RV i PVO ELINT surveillance, there were around 100 NATO aircraft engaged during the first night of Allied Force on 24-25 March, of which 72 were confirmed and registered. The attacks were reported as coming from the south and south-west, and surprisingly also from the north, from one of the newest members of NATO members: Hungary. Being a new NATO member, Hungary offered its air space for Operation Allied Force. The appearance of NATO strike packages from Hungarian airspace was a total surprise for the Serbian military senior leadership, as the estimations and reports of the Intelligence Department of the RV i PVO HQ show, as well as the memoirs of RV i PVO Commander General Smiljanić. The other surprise that first wave brought was the use of cruise missiles alongside the strike aviation against targets throughout FR Yugoslavia. This was in contrast with the experience from Operation Deliberate Force, when cruise missiles were used separately to destroy targets which were difficult to reach by regular strike packages.

In the first wave, cruise missiles hit important RV i PVO targets, including nearly all of its long-range radar sites located at Mount Crni Rt near Bar, Mount Kopaonik and Kačarevo in Banat. NATO forces continued with the strikes that evening and into the night, targeting in total 31 RV i PVO sites. These included three more radar sites at Mount Goleš overlooking Priština Air Base, the hill at Koviona south of Belgrade and near Sombor Air Base, close to the Hungarian border. Five air bases – those at Batajnica, Ladjevci, Ponikve, Priština and Podgorica – were also hit, with a total of 10 targets destroyed. Other targets hit included three command posts – the underground RV i PVO HQ at Mount Fruška Gora, the underground HQ of Korpus PVO at Straževica in southern Belgrade, and empty premises of the 20th OCS at a hill near Stari Banovci; six peacetime missile air defence firing positions at Mladenovac, Jakovo, Pančevo, Smederevo, Batajnica and Ladjevci; four RV i PVO barracks used by self-propelled air defence regiments at Priština, Kragujevac, Danilovgrad and Novi Sad; and finally, a



This two-seater MiG-21UM, No. 16151, was damaged beyond repair during the first night of Operation Allied Force. (204.lap)



A destroyed Utva V-54 Lasta, serialled 54155, at the heavily damaged production line of the Utva factory at Pančevo, during the first night of Allied Force. (B. Dimitrijević)

well-hidden location occupied by the 280th ELINT Centre at ‘13 May’ Farm, a few miles south of Batajnica Air Base.[13]

NATO had tried to deliver a knockout punch on the first night of the air campaign against Yugoslavia, much like the attack on Baghdad during Operation Desert Storm in 1991. Scores of cruise missiles were launched against fixed targets, followed by air strikes.[14] Nearly everything of importance among the RV i PVO’s infrastructure was targeted in the first night of the operation. During the same night, 14 locations used by Yugoslav ground forces and one by the Serbian Ministry of Interior were also targeted and attacked.

The first wave of attacks proved that the earlier Yugoslav practice of dispersion was useful. Indeed, it would be continued over the following days, limiting the success of the air strikes in the attempted destruction of air defence units’ infrastructure. All of the RV i PVO’s air defence missile units remained unharmed, since they had all abandoned their peacetime positions prior to 2000 hours on that first evening. Air surveillance units managed to cope with the first wave of NATO air strikes, losing only formations which continued to operate from their peacetime positions. The defenders’ radar system was slightly degraded but its command system remained functioning.

There were no fatalities in the ranks of the RV i PVO, only one serviceman being wounded. Morale remained high, and generally the senior leadership were satisfied – there were no major surprises or large losses. The exception was the 250th Missile Brigade, which did not manage to carry out dispersion of its spare V-601P Neva missiles. Immediately after 2000 hours, NATO aircraft hit storage areas in Jakovo and Sremčica, around Belgrade, destroying some 120 V-601P missiles.[15] However, on the next day, the dispersion of fuel, ammunition, spare parts and other materiel continued.

A much more serious blow to the RV i PVO came when NATO aircraft targeted and seriously damaged the Moma Stanojlović Air Depot and Utva aircraft factory. Located at the southern side of the Batajnica Air Base, this air depot had been the main overhauling facility of the Yugoslav Air Force since the start of the 1970s. The Utva factory at Pančevo was the location for limited aircraft and spare parts production. Some 15 light RV i PVO aircraft and civil aircraft were destroyed there, while the same number were damaged, including half-a-dozen Super Galebs which were awaiting overhauls.[16] Targeting of the air depot and Utva factory was a sign that NATO wished not just to stop the clashes in Kosovo or to downscale the Yugoslav Army’s potential for air defence, but to destroy the whole Yugoslav/Serbian aviation infrastructure. Neither institution recovered from this attack, although they were renovated to some extent during the post-war years.

The first night of attacks showed that RV i PVO expectations that Hardened Aircraft Shelters would provide security for the aircraft was wrong. This delusion was obvious on the morning of 25 March when most of the targeted HAS spread over Batajnica Air Base were destroyed, including the most modern Vranica shalter, built for MiG-29s which were to maintain QRA. In those shelters, half-a-dozen aircraft at a time were destroyed or heavily damaged, along with the equipment and AAMs for one of the fighter squadrons which was stored in each HAS. It was a bitter lesson for the RV i PVO that the Cold War era shelters were useless when attacked with precision guided munitions.

A hit on a HAS meant the complete destruction of aircraft and other equipment inside it, such as spare ordnance or auxiliary power units. This was not the case if the aircraft was targeted outside on the apron or taxiway. There, if the hit was not precise, the targeted aircraft may suffer only minor damage. This Cold War era system of protection thus showed itself useless, and it was concluded that the aircraft on the ground should be kept from destruction by using other methods – such as constant moving, hiding or using improvised protection. After 26 March, the ground crew at Batajnica started to move MiGs all over the air base to reduce losses. General Smiljanić commented: "Already after the first strikes we have concluded that the current doctrine of aircraft protection on the ground is not relevant any more".[17] Planned and built for the challenges of the Cold War, HAS or 'ABS' (*armirano-betonska skloništa* – reinforced concrete shelters) did not offer any protection from laser-guided bombs.

The first night of Operation Allied Force mostly targeted the Yugoslav (Serbian) RV i PVO infrastructure and air defence sites. There were no attacks on targets which were vital for command and control of the whole military and Ministry of Interior forces in Kosovo. Nor were there attacks on the Yugoslav/Serbian ground forces which were accused of 'ethnic cleansing' of Kosovan Albanians, despite that being the political explanation why the operation was launched.

The first day of Allied Force did not fulfil the expectations of NATO or among most American political circles, that a single massive attack was sufficient to force the Serbs to accept political pressure and give up of control over their southern province of Kosovo.

Nevertheless, the role and performance of the Yugoslav fighter aviation was a severe blow to the RV i PVO senior leadership, which mostly consisted of former fighter pilots. General Smiljanić, an ex-MiG pilot himself, revealed: "Among all of us, there was disappointment and a feeling of frustration caused by the losses that combat aviation suffered on the ground, especially at Batajnica Air Base." Eleven aircraft and two helicopters were destroyed on the ground at the base, with four shot down and 11 more damaged. "It was bitter pill that no one could take," Smiljanić concluded.[18]

A particular frustration for the RV i PVO senior leadership was the unsuccessful attempt to intercept the NATO formations with MiG-29s. Several of them that took off were shot down. Moreover, this frustration was increased by the fact that none of the NATO fighters were hit. To the question why RV i PVO fighters "did not have the chance to use their weapons and act against the NATO aircraft" there was no immediate answer.[19]

However, answers did come after the campaign. In most cases, the MiG-29s' radars and radar warning receivers were not functioning. It was a matter of ongoing debate in the media and between several downed pilots and the former RV i PVO commander, General Smiljanić, after the campaign. Contrary to the pilots who engaged in the public debate, Smiljanić maintained the view that the MiGs were fully operational, despite all the evidence of problems with radars. The other issue was the MiGs' limited numbers. Almost one-third of the total of 16 MiG-29s were not operational due to lack of spare parts or them needing an overhaul. Such a lack of airworthy MiG-29s led to them being deployed in pairs or flying solo. The RV i PVO senior leadership expected that "with different tactical manoeuvres and with flying by the most experienced pilots, they can try to cause at least minimal losses to the enemy." It is worth mentioning that Yugoslav (Serbian) pilots were trained for a dog-fight, whereas the NATO forces generally avoided close combat. While the Serb pilots naively expected direct encounters in the air, NATO pilots mostly used long-range AMRAAM missiles, which provided them with the advantage of firing from a safe distance.

The RV i PVO senior leadership inspected the air defence units around Belgrade the next morning. As the missile air defences had not claimed any of the NATO aircraft, former RV i PVO commander, now assistant to the MoD and seasoned MiG pilot General Veličković criticised the gathered personnel of the 3rd Battalion of the 250th Missile Brigade, saying: "Why did you not work and claim the aircraft?"

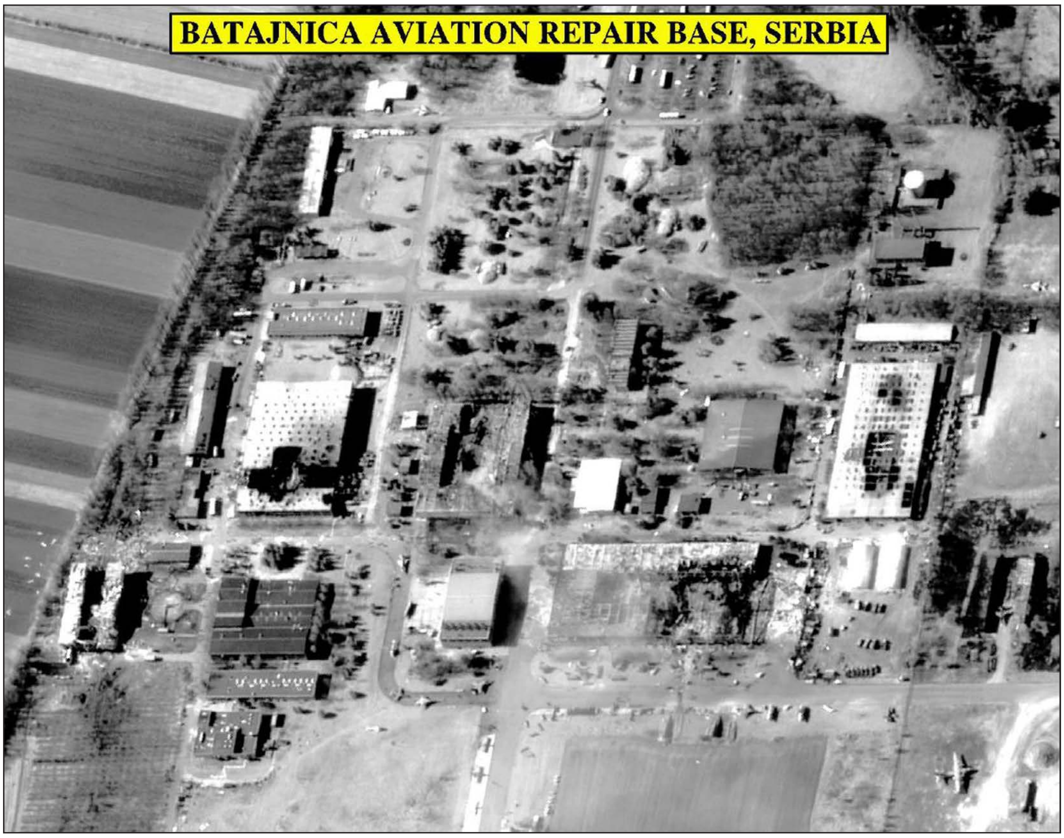
The first night of Operation Allied Force showed that the air campaign had no front lines or selected territories within Yugoslavia. The whole territory of both republics that formed FR Yugoslavia – Serbia and Montenegro – were under air attack. It was a worrying feeling for the military, but even more for the civilians. The only front line was the sky, and that was everywhere. However, the first attack had been withstood: the Yugoslav/Serb RV i PVO and Air Defence remained on their feet.

4

OPERATIONS FROM 25 MARCH TO MID-APRIL 1999

There were no air attacks on the morning of 25 March. Huge palls of smoke from the destroyed Air Depot and Air Base at Batajnica were visible miles away in central Belgrade. RV i PVO personnel started to evacuate what remained useful from their air base. Helicopters of the 890th Mixed Helicopter Squadron were dispersed out of Batajnica. All airworthy An-26s of the 677th Transport Squadron, meanwhile, were flown at low level from Batajnica to Belgrade International Airport or Ečka airfield near Zrenjanin. Final transport sorties with a single An-26 were carried out on the following day between Batajnica and Golubovci.

At Kovin Air Base in southern Banat, east of Belgrade, the 3rd Detachment of the 251st Fighter-Bomber Squadron (HQ in Podgorica), which was tasked with basic pilot training, also dispersed its aircraft. A total of 23 light piston Utva 75s were ferried to five neighbouring sports airfields between 26 March and 2 April by only five senior pilots from the unit.[1]



Post-strike footage of the Moma Stanojlović Aviation Repair Plant on the southern side of the Batajnica Air Base complex. The plant, which was the main overhaul and repair hub for the entire RV i PVO, was targeted and heavily damaged from the first night of Operation Allied Force. The partly destroyed main overhaul workshop (P-1) is in the lower-middle part of the photograph. (USAF/DoD)

These attacks simply confirmed the view of RV i PVO officials that dispersion of spare parts, fuel, ammunition from storages and other materiel was necessary. The casualties suffered led to an order that all surplus personnel should abandon the complexes and bases to avoid further losses. Only those who were necessary for functioning and operations would remain.

RV i PVO Carries Out Limited Air Strikes Against UCK

Yugoslav Army documents prove that no counterattack or other response against NATO forces was authorised at this time. President Milošević ordered that Yugoslav Army forces should not make any aggressive moves against the NATO forces that were deployed in Macedonia or Bosnia and Herzegovina. Combat operations were only to commence if there was an obvious reason. Milošević well understood that any retaliatory attack would be perceived as aggression against sovereign neighbouring states, thereby handing NATO the legitimacy to act as their protector and launch widespread strikes on Yugoslavia.[5]

Air attacks were resumed at around 1630 hours, with Batajnica Air Base again coming under fire. Hammering of HAS and the air base infrastructure continued. Air and cruise missile strikes continued at several locations. In two of the HAS belonging to the 1/353rd Detachment, a further two MiG-21s were destroyed. During the following days, a hangar of the 1/353rd Detachment was also destroyed, causing the destruction of nearly all of this small unit's MiGs and Utva piston trainers.[2]

On the next night, 26 March, both barracks belonging to the missile-technical battalions (Nos 1 and 2) of the 250th Brigade were attacked with cruise missiles. At the village of Zuce below Mount Avala, the 2nd Missile-Technical Battalion suffered less damage than the 1st Missile-Technical Battalion at Sremčica, a village south-west of Belgrade above the Save River. After being hit by cruise missiles, a storage area – with 40 Neva V-601 rockets and explosives used to start engines for the obsolete Dvina (SA-2) system – was destroyed in an enormous explosion, the fireball of which was visible dozens of kilometres away. There were no casualties, but the effect on citizens in the south-western suburbs of Belgrade and southern Srem was shocking.

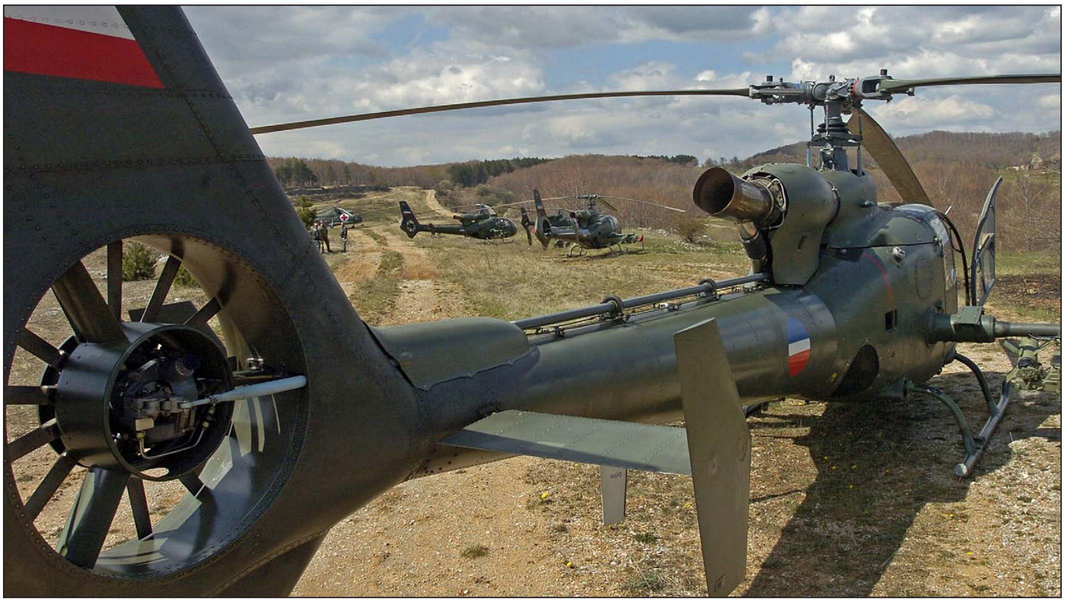
The NATO air strikes continued on 27 March. At 1720 hours, the 5th Missile Battalion of the 250th Brigade was neutralised in its firing position at the village of Progar in Srem. It was the first RV i PVO missile unit destroyed by a SEAD strike package.[3] There were no casualties in this case, but in another attack, two senior NCOs of the 210th Communications Battalion who were fixing the radio-installation and antennae above the '909' complex were killed in a sudden air strike.[4] There were further casualties on 28 March, when in the wider Novi Sad area, the three-member crew of a R-StON (Straight Flush) targeting radar of the 240th SP Missile Regiment was killed when hit by an AGM-88 HARM missile.

Yet despite the air superiority established by NATO over Yugoslavia, the RV i PVO carried out its first air strikes of the campaign against Kosovan guerrillas on 25 March. The strikes targeted larger UCK positions deep in the middle of Kosovo.

Missions were carried out by Orao pilots from the 98th Fighter-Bomber Regiment: the 241st Squadron at Ladjevci (10 sorties with 10 strikes) and the 252nd Squadron from Ponikve (eight sorties with five strikes). Based at Niš, the 229th Squadron from Golubovci used their Super Galebs in six sorties, with four strikes. They mainly used their well-proved weapon of choice, some 56 British BL755 cluster bombs, and to a lesser extent 32 Yugoslav FAB-250s and underbelly GSh-23 gun pods.

The first missions on 25 March were carried out from Ladjevci at around 1200 hours, with four Oraos attacking UCK positions. The mission was successful and lasted 18 minutes. Another four-ship attack was carried out at around 1650 hours but was not a success. The leading Orao was struck and crashed to earth, while one of the Oraos in the second pair, flying very low, hit transmission lines and was damaged, although the pilot managed to return the aircraft to base. On the following day, a detachment of four Oraos took off at 1120 hours from Ponikve, led by the commander of the 98th Regiment. One of the Oraos returned after take off, while the others proceeded to carry out strikes on UCK positions. Other missions were carried out on 1 and 2 April from Ladjevci Air Base, with two-ship formations hitting further UCK positions in Kosovo.[6]

All of the missions were launched upon the request of the Third Army HQ, which marked a total of 15 targets, among which 11



Armed GAMA Soko/Aerospatiale SA-341/342 Gazelles of the 119th Helicopter Regiment, shown following their departure from their main base at Niš after the initial NATO strikes. (MCO)

were attacked. Missions against three targets were cancelled due to bad weather, while an attack on a fourth target was called off due to the appearance of NATO fighters. There was no FAC (Forward Air Controller) assistance in these attacks, nor aerial photos of the targets. It was the same as during the Bosnian air war between 1992 and 1995, with Serb strike pilots having to discover the targets on the ground, quickly attack them and then find their way back, avoiding ground fire or orbiting NATO fighters.

All of the sorties were carried out in the so-called 'low-low-low' regime in total radio silence. The exact details of each mission were given directly by the regimental commander to the crews on the apron. The attacks were carried out at low level, with no repeat strikes. As was the case with NATO, BDA (Battle Damage Assessment) was a problem for the Yugoslav Air Force. It was estimated using reports from neighbouring ground forces that nearly all missions were successful, but there were no additional reconnaissance missions to confirm the results.

Motivation of the pilots was excellent, with several younger pilots also requesting to take part in the action. Nevertheless, the strikes were carried out by the most experienced pilots of all three squadrons. On this first day of RV i PVO air strikes, the commander of the 241st Squadron, Major Života Djurić, was brought down by KLA fire and killed. His Orao (serial 25104) hit the ground over one of the KLA positions on Mount Čičavica, near the village of Likovac.[7]

Use of the RV i PVO strike Oraos and Super Galebs was short-lived, lasting only for a couple of days in the initial phase of the campaign, between 25 March and 4 April. NATO responded quickly in forthcoming days, with air strikes damaging or destroying the runways, aprons and HAS at Niš, Ponikve and Ladjevci. On 28 March, one technical NCO was killed on the apron of the 229th Squadron at Niš, while six other ground crew were badly wounded, when the air base was attacked. The parked Super Galebs suffered no serious damage. Damage caused to the runways at the three air bases[8] forced the RV i PVO to cease further air strikes. Most of the Yugoslav Air Force aircraft were later moved around the bases to preserve them from the ongoing NATO strikes.

A damaged auxiliary site on the top of Straževica hill, above the '909' complex, where two NCOs of the 210th Communications Battalion were killed on 26 March. (Sladjan Ristić, 210.bv)

КОМАНДА
АЕРОДРОМА

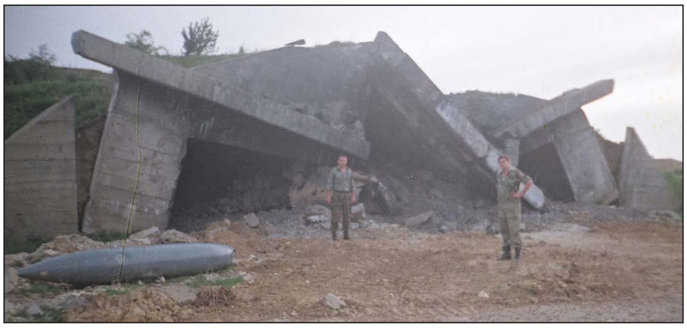
Destroyed base HQ infrastructure at Ponikve. The 65th Aviation Support Battalion was in charge of this air base from 1997-99. (Slobodan Mihajlovic)

Two MiG-29s Claimed Over Eastern Bosnia

The first period of the air war over Serbia was also marked by the downing of two RV i PVO MiG-29 fighters and a single USAF stealth Lockheed F-117A Nighthawk. All were brought down on 26 and 27 March within less than 30 hours.

After the evening of 24 March, 26 March was the day when the RV i PVO suffered the greatest losses in its MiG-29 fleet. In total, three of them were lost, including one pilot.

At 0930 hours, Major Slobodan Tešanović took off from Podgorica Air Base, having been ordered to relocate his MiG-29 (serial 18110) to the base at Ponikve, where it was believed to be much safer. His MiG was slightly damaged on the first night of Allied Force, but had been fixed for flying. After taking off from Podgorica in broad



A destroyed HAS at Ponikve Air Base. Behind one of the ground crew, the rear of a destroyed J-22 Orao is visible. A total of six J/NJ-22s of the 98th Regiment were lost in destroyed shelters at this base during April and May 1999. (Slobodan Mihajlovic)

US Army troops belonging to SFOR (Stabilisation Force) inspect the crash site of Radosavljevic's MiG-29 (serial 18113) which crashed in the area around Bijeljina. The wreckage of the MiG remained at the site for several months after the campaign. (USAF/DoD)

daylight, Tešanović continued into western Serbia. While approaching Ponikve Air Base, either his MiG suffered some malfunction or he was overwhelmed by fatigue, having been on alert status for three nights, and he was forced to bail out. Tešanović was catapulted from the cockpit almost at the edge of the runaway, while his fighter crashed nearby. It was almost certainly an unnecessary loss.[9]

There were more losses to come that day. At 1600 hours, all airworthy MiG-29 fighters of the 204th Regiment at Batajnica were alerted and put into the highest state of combat readiness. The Operations Centre of the Air Defence Corps ordered two MiGs into the air at 1645 hours. The two 'Knights', Major Slobodan Perić (flying the serial 18114) and Captain 1st Class Zoran Radosavljevic (in 18113), took off at 1653 hours. Even though he had not been flying for more than six months, Radosavljevic had abandoned his English military language course and voluntarily returned to his squadron.

Perić and Radosavljevic flew to an area over Bečej and started to cruise at 3,000 metres. Perić later testified that the radar on his MiG stopped working during this stage of the mission. Radosavljevic, who acted as his wingman, had no problems with his radar. The pair agreed that Radosavljevic should take over and fire his missiles first, if needed. Suddenly, the operations centre reported that NATO aircraft were withdrawing from Yugoslav air space, saying: "Blues are escaping to the west!" In Yugoslav Army parlance, blue was the colour used to mark aggressors/enemies, while red was the colour of domestic or friendly forces. This practice of colouring friend and foe remained after the 1999 war against NATO.

The two MiGs were then directed south-west to continue pursuing the enemy aircraft into western Serbia, over Valjevo. Both pilots were using their afterburners and continued climbing through the clouds, reaching the border between Serbia and Bosnia and Herzegovina somewhere south of Šabac, at a height of around 7,600 metres. Perić recalled that his SPO radar warning receiver did not function and that he was warned by Radosavljevic that they had been 'illuminated' by the enemy fighters. Perić started to perform anti-AAM manoeuvres, and both pilots heard a voice from the operations centre telling them: "They are after you!" White trials of AAM missiles were already visible and approaching. Radosavljevic tried to escape into the clouds, while Perić carried out further anti-AAM manoeuvres, but they did not manage to shake off the missiles.

Perić was hit and, realising that his MiG had turned into a ball of fire, managed to eject safely. It was initially believed that he was hit by Lieutenant 'Boomer' McMurray's F-15C (serial 84-0014). He was part of a two-ship MiGCAP (MiG Combat Air Patrol) or Defensive Counter Air mission of the 493rd FS in F-15C Eagles. The leader of the pair was Captain Jeff 'Claw' Hwang (in the F-15C serial 86-0156). Claw recalled the encounter to author Robert Dorr two years later:

Captain 1st Class Zoran Radosavljevic – a pilot of the 127th Fighter Squadron, known as the 'Knights' – was shot down and killed on 26 March over eastern Bosnia. (204.lap)

The night launching of a Neva (SA-3) missile during Operation Allied Force. (250.rbr PVO)

> By the time we actually identified [the lead MiG], it was about a minute and a half from the very beginning of the encounter. At that point I cleared my wingman to start engaging the MiG. So, he takes his first missile shot at a range – without going into details

A SNR-125 missile control radar (NATO 'Low Blow'), known as a 'StVR' in the RV i PVO, at an improvised position. (250.rbr PVO)

> – basically around 30 miles (48km). I looked for and I found an additional contact. There was not just one but two guys out there. [After shooting] we actually saw a fireball, a streaking fireball … and that was followed by another fireball in close proximity.

After the encounter with the Serb MiGs, the radio call was heard: "Splash two MiGs!" Later analysis led to both MiGs being credited to Captain Hwang, who thereafter proudly painted two Serbian roundels on the port side of his F-15C.[10]

On the ground, Perić was at first 'captured' by armed Bosnian Serb villagers, whom he struggled to convince that he was actually a Serbian pilot. The villagers were rough with what they believed was a NATO pilot who could speak Serbian well, until he got the chance to telephone his cousins in Belgrade who confirmed his identity. However, Zoran Radosavljevic had no such luck. He was killed in the missile hit and his plane crashed south of Bijeljina at 1712 hours.[11]

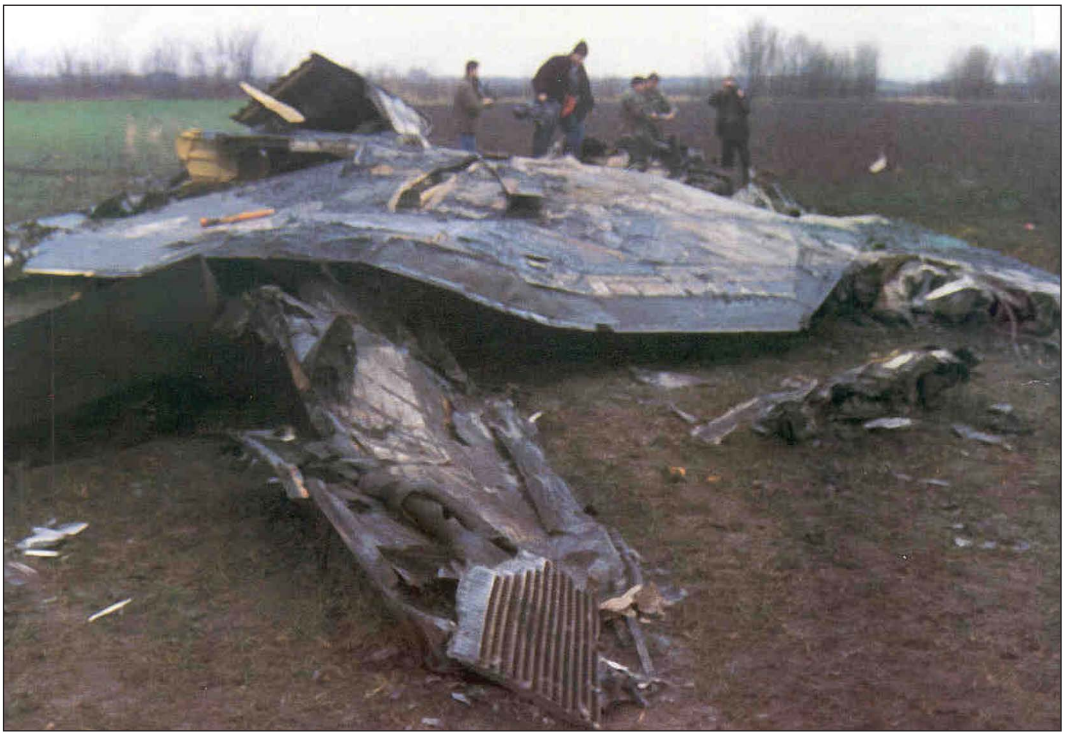
Both Serbian pilots came down in the border area between Bosnia and Herzegovina (the Republic of Srpska) and Serbia. The Western media speculated that the Serbs had been trying to expand the war into Bosnia by sending two MiG-29s into its air space.[12] Even more fantastic was the suggestion that the Serb pilots had tried to bring down valuable NATO surveillance assets such as AWACS or J-STARS which orbited in Bosnian air space.

On the same evening, more strike packages were sent to pound the Batajnica MiG-29 nest, destroying further infrastructure of the 127th Fighter Squadron. There were no further intercepting sorties by the remaining MiG-29s until the beginning of May.

Despite Smiljanić's decision that no MiG-21bis should be used in air combat against NATO forces, two MiG-21s were usually kept in QRA at Batajnica and two at Priština, sometimes even being put into the highest state of readiness, plus two Batajnica MiG-29s. Yet no interception sorties were ordered. The QRAs and high states of readiness were continued throughout April with MiG-29s. Occasionally, MiG-21s and MiG-29s were raised to the highest combat readiness, such on 5 or 8 April at Batajnica. However, most of the time they just hid and waited.

Back in Belgrade, Major Perić was summoned to report to RV i PVO commander General Smiljanić. According to Perić, the short conversation between two MiG pilots went as follows:

> (Smiljanić) "Why you did not claim any of the Americans?"



Wreckage of the F-117A Nighthawk stealth fighter on the Srem plain near the village of Budjanovci on the morning of 28 March. (250rbr PVO)

> (Perić) “General … sir … if you provide us with airworthy aircrafts, maybe we shall claim them. Are there any technicians to repair them?”
>
> (Smiljanić) “They repair what they can … What do you think? That you are hero since you bailed out from the plane!? All of you … you just want higher ranks! But you are not willing to die!”[13]

Claiming of a Stealth F-117A

Contrary to the failure of the RV i PVO fighters, which did not manage to claim any of the Americans, the missile units of the Air Defence shot down one USAF aircraft on the following evening, and it was no less than a Lockheed F-117A Nighthawk stealth fighter.

At 2042 hours on the evening of 27 March, the 3rd Missile Battalion of the 250th Missile Air Defence Brigade brought down the Nighthawk over the village of Budjanovci in Srem, north-west of Belgrade.[14] Photos of debris from the F-117 on the Srem plain, surrounded by cheerful Serb soldiers and nearby villagers, were seen worldwide.

For the Serbs, the claiming of the F-117A stealth fighter has become one of the most notable events of the whole air campaign, still being a matter of national pride to this day. It was undoubtedly a major success for the RV i PVO’s Air Defence, like a shot of adrenalin for its personnel and a morale-booster for all the Serbian forces. Conversely, losing a F-117A was a sudden shock for the USAF and NATO. From a technical perspective, it was an unfortunate confirmation that it was possible to bring down an advanced technical system with a less sophisticated and even obsolete missile and radar apparatus.

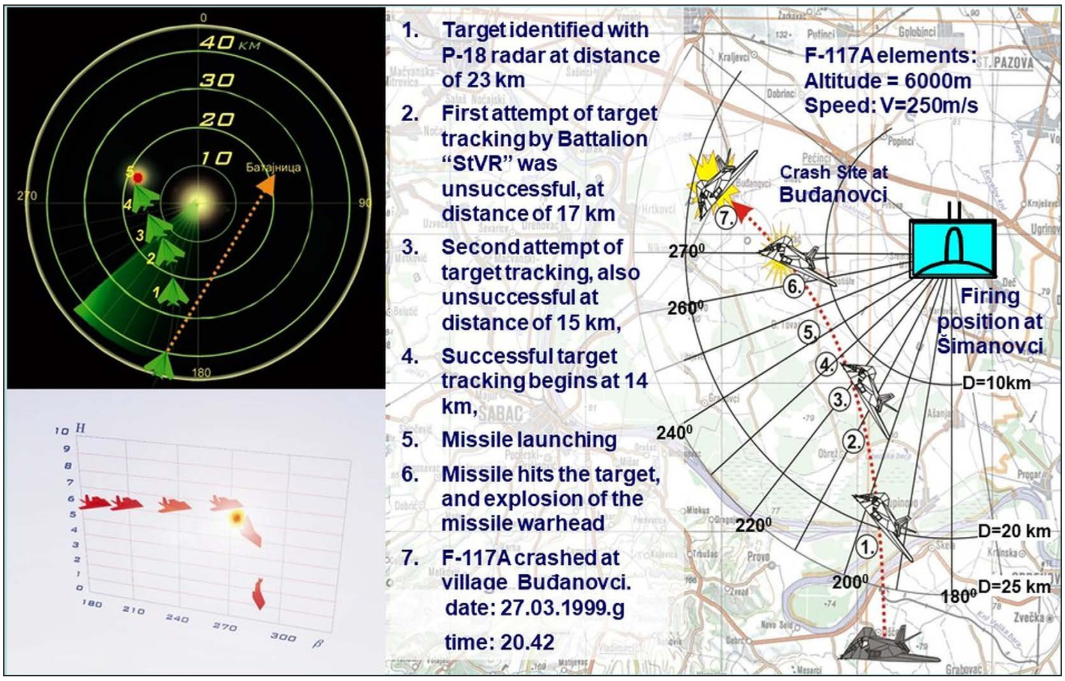
Years after the conflict, it became obvious during high-level talks between RV i PVO and USAF officials in 2005-06 that the Yugoslav 280th ELINT Centre had managed through SIGINT interception and constant monitoring of radio communication to track even the stealth fighters. It was a nasty surprise for the USAF experts to hear how Serbian ELINT operators managed to track the stealth aircraft while constantly monitoring NATO air communications prior to and during operations.[15]

Despite stealth pilots being disciplined in their radio communication, the pilots and crews of other types of aviation and other NATO air forces used to comment on their appearance in the air. Such comments were mostly made by air refuelling crews and pilots who were performing routine CAP missions. Colonel Vujić, who commanded the 280th ELINT Centre during Operation Allied Force, confirmed that they identified a total of 279 F-117A sorties during the whole campaign. They had done so during the evening of 27 March, when at least five F-117 stealth fighters were identified, with the information passed on to the operations centre at 1958 hours.[16]

Colonel Dragan Stanković, who as Deputy Commander led the 250th Brigade throughout the operation, recalled that he ordered his missile battalions to enter the highest state of combat readiness upon receiving information about the gathering of a strike package north of Belgrade. Lieutenant Colonel Zoltan Dani’s 3rd Missile Battalion, at a firing position at Šimanovci, near the E-70 Belgrade–Zagreb motorway, was at launch readiness at 2015 hours.[17]

The shot-down F-117A had been targeting the underground ‘909’ complex at Straževica with two GBU-10 Paveway PGMs at 2036 hours. It is interesting to note that the first identification of the approaching aircraft was received by the 3rd Missile Battalion from radio amateurs, and not from the Air Surveillance.[18] At 2040 hours, the targeting radar of the 3rd Missile Battalion showed that the target was moving out of its zone, at 150 degrees and a distance of 18km. A minute later, it was at 195 degrees and distance of 23km, fully visible on the targeting radar screen. Finally, despite several manoeuvres by the target and the turning off of the surveillance radar, the missile crew worked on tracking their aim. When it showed on another screen, the battalion CO gave the order to open fire. Two Neva rockets were launched at 245 degrees azimuth, a distance of 12km. At 2042 hours, 18 seconds after launching, the first of the missiles (serial НЖ 7433) hit the target. The radar screen showed a sudden enlargement of the reflection which came from the explosion. The stealth fighter was hit while flying at around 7,000 metres, at an estimated speed of 250 metres/sec. Soon after, the 3rd Battalion started to pack away its missiles and equipment, moving to another firing position at 2230 hours.[19]

The stealth fighter crashed in the vicinity of the Srem village of Budjanovci. The pilot – Lieutenant Colonel Dale P. Zelko, known as ‘Sugar D’ and using the call sign ‘Vega 31’ – managed to eject from the cockpit. His F-117A had the USAF serial 82-0806 and belonged to the 8th Squadron of the 49th Fighter Wing based at Holloman AFB. The plane had logged 39 missions in Iraq in 1991.[20]


0
40 KM
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180
210
240
270
300
β
1. Target identified with P-18 radar at distance of 23 km
2. First attempt of target tracking by Battalion "StVR" was unsuccessful, at distance of 17 km
3. Second attempt of target tracking, also unsuccessful at distance of 15 km,
4. Successful target tracking begins at 14 km,
5. Missile launching
6. Missile hits the target, and explosion of the missile warhead
7. F-117A crashed at village Buđanovci. date: 27.03.1999.g
time: 20.42
F-117A elements:
Altitude = 6000m
Speed: V=250m/s
Crash Site at Buđanovci
Firing position at Šimanovci
270⁰
260⁰
240⁰
220⁰
200⁰
180⁰
D=10km
D=20 km
D=25 km
ST. PAZOVA

A diagram explaining when and how the 3rd Missile Battalion identified, tracked and brought down the F-117A stealth fighter at 2042 hours on 27 March 1999. (250rbr PVO)

The crew that claimed the F-117A stealth fighter with the commander of the 3rd Missile Battalion, 250th Missile Brigade, Lieutenant Colonel Zoltan Dani, who is seen smiling in the middle of the top row. (250rbr PVO)

Many years later, while a guest in Belgrade, Zelko met Colonel Dani – whose men had shot him down – and recounted the final moments of his sortie:

> During egress from the target area I was on high-alert for very lethal Air Defense Systems I was aware of in the vicinity of my route. When I was approximately 20 miles west of Belgrade, and immediately after making an aggressive right turn to the Northwest, I was looking outside the cockpit [at my right 4 o'clock] because I knew your SA-3 system was roughly in that region … as soon as I looked down at my right 4 o'clock, I saw the two missiles you had launched and knew immediately that my aircraft was going to be hit.

After being hit by the Neva missile, Zelko lost control of his aircraft. He just managed to say over the radio "Vega 31 is going down… I am going down!" before ejecting. Zelko continued: "Although I never gave up hope throughout the night, I truly did not expect to be rescued. I also did not expect to live through the shoot-down and ejection."[21]

According to records from the 280th ELINT Centre, the pilot turned on his 'beacon' at 243.000 MHz, one minute after ejection. His signal was identified by a British air controller inside the NATO E-3 AWACS (call sign Magic 86). The signal was received by the ABCCC (call sign Moonbeam) and one of the USAF air tankers which was orbiting in Bosnian airspace. The latter was the closest NATO aircraft to the crash site at the time. The AWACS which also monitored the situation cancelled a strike package which was about to enter Yugoslav airspace and ordered four F-16s and two F-15s to organise a CAP in the area around the crash site.[22]

Rescue Operation

There was soon a massive gathering of USAF aircraft engaged in the CSAR operation to locate Zelko. Initially there were four F-15Es, four SEAD F-16CJs and two EA-6B Prowlers. At 2200 hours, the ABCCC arrived in the Zvornik–Bijeljina area. Seven more A-10 patrols in 10-minute intervals searched the wider area. Even an AC-130 gunship based at Brindisi became involved. By 2300 hours there were four F-15Cs, three F-16Cs, three F-15Es, two EA-6Bs and two MH-53J helicopters gathered in the area surrounding the crash site, but mostly out of Yugoslav airspace.[23]

The crew of a KC-135R Stratotanker from the 91st ARS/6th ARW, which took off from Moron Air Base in Spain, was ordered by an AWACS controller to depart their refuelling area and immediately head to north-eastern Bosnia. They joined the rescue mission by refuelling the A-10s around the crash site.[24]

'Sandy 51', an A-10 pilot, became the on-scene commander during the rescue operation. The pilot, a captain flying his first combat mission, located the downed stealth pilot and covered him during the hours of darkness, a capability which had not existed in recent years but which was now made possible by the use of NVGs

(Night Vision Goggles) and improved communications. “This captain, circling, directed other A-10s against Serb air defences and coordinated efforts by an MH-60 Pave Hawk and supported aircraft which ensured the F-117 pilot was spotted and snatched to safety,” author Robert F. Dorr concluded in an analysis of the rescue operation.[25]

The CAOC had received confirmation from an ABCCC that an American stealth pilot had ejected over Serbia. General Wesley Clark, commander of NATO forces in Europe, wrote in his memoirs that he was informed by General John Jumper, the USAFE commander, that a stealth fighter was lost in Serbia. Clark said that this was the call that he was always afraid of. He informed Hugh Shelton, Chairman of the US Joint Chiefs of Staff, who received the news calmly, telling Clark that he and the Defense Secretary, in preparing for the operation, had always counted on losing several aircraft. Clark said that the plan was to provide enough time to rescue the pilot by withholding information from the media about the downed stealth fighter for a couple of hours. However, the Serbs, exploiting the success of their air defences, already had TV cameras at the site early that morning. Consequently, the world’s media soon showed these first reports from the F-117 crash site, showing joyful civilians with the remains of the stealth fighter.[26]

The top priority for the USAF now was to get the pilot to safety. The rescue operation was a great success, despite the hardships in organising it through the night of 27-28 March. Orbiting the Bijeljina–Zvornik area, an ABCCC coordinated the operation, while A-10s and the AC-130 gunship provided combat cover and communicated with the pilot.

On the night of 27 March, a 20th SOS crew, including Captain Cardoso as flight lead for the rescue package, took off from Brindisi in a MH-53M search and rescue helicopter. The wingmen were an MH-53J from the 21st SOS, flown by Captain Shawn Cameron, and a MH-60G from the 55th SOS, commanded by Captain Chad Franks.

As the flight of three helicopters proceeded to Tuzla, the crews checked in with the NATO AWACS on station and overseeing the strikes that evening. The weather over the region was poor, with rain showers and low visibility, and many strikes had been cancelled. Cardoso and his group landed at Tuzla and immediately taxied to the refuelling pits to fill their tanks. An hour later, at 2150 hours, the CAOC authorised the rescue force to launch. The three helicopters quickly took off and headed north, where at least the air was clear and night visibility was good. En route, though, they had difficulties establishing communications with the A-10s and other support aircraft. On the ground, Zelko had been able to use his handheld GPS to determine his location The reported position, validated by the A-10 flight lead, Captain John Cherrey – who had established radio communications with and authenticated the survivor – indicated that ‘Vega 31’ (Zelko) was on the ground just south of the city of Ruma.

The rescue package finally received approval to cross into Serbian air space. At the holding point, Cherrey briefed Cardoso and his flight on the escort and recovery plan. He told Cardoso to call him when they were 2 miles from Zelko so that he could tell him to turn on his signalling device. They all acknowledged the plan, and Cherrey directed them to execute.

Descending to 50ft above ground, the three-ship CSAR team proceeded inbound toward Zelko. Several times, Cardoso had to increase his altitude to 100ft to avoid obstacles and populated areas.

Two miles from Zelko’s location, the rescuers contacted the survivor, but they could not see him. Zelko’s infrared strobe was inoperable and he could not locate his pen-gun flares. Cardoso’s team told him to fire his overt flare, which he did. Immediately, the MH-60G flight engineer spotted it, half a mile to the east. Seeing the flare, Captain Chad P. Franks, the Pave Hawk aircraft commander, turned toward Vega and headed inbound. The two Pave Lows also turned, so as to overfly Vega, then turned to the west to hold. Franks flew the approach to the ground, the helicopter touching down as close to Zelko as was possible, with the downed pilot just outside the track of the rotor blades. Special Tactics personnel – consisting of two para-rescuemen and a combat controller – quickly exited and assisted Zelko aboard. Grabbing him, they announced, “Your PJs are here to take you home!” Forty-five seconds after landing, Franks’ aircraft was airborne.[27]

Stealth fighter pilot Lieutenant Colonel Dale Zelko reports back to his unit in Aviano on the morning of 28 March after his successful rescue. (video)

Using the reports of the 280th ELINT Centre, we know several further details of the rescue operation. For example, they heard two of the A-10 pilots, who were orbiting the wider crash site area, ask the downed pilot to activate his IR strobe to identify himself. Furthermore, after the landing of the rescue helicopter, Zelko was to identify himself by saying the name of the most famous football player from New York. At 0420 hours, the landing of the rescue party was registered, but without the exact position – which was some hundred metres from Zelko’s location. Finally, at 0427 hours, the 280th ELINT reported that the helicopter had taken off and was in low-level flight out of Serbia.[28]

According to RV i PVO SIGINT, the pilot was rescued after some seven-and-a-half hours on Serbian soil, 3.66km from the crash site and about 500 metres from Belgrade–Zagreb motorway. From locating trails in the mud, the Serbian investigation team concluded that a rescue helicopter had landed twice, with one of the rescue team members “forgotten” in the hurry. Despite the eventual success of the operation, it had taken a long time to execute, with difficulties in mutual communication and mistakes in identification of the positions of the grounded pilot and the different groups in the air.[29]

Captain Cardoso, in the lead Pave Low named ‘Magic’, informed the British air controllers aboard NATO’s E-3A AWACS that the “PC” (precious cargo) was aboard and egressing Serbia. After a gruelling five-and-a-half-hour mission, Cardoso’s team landed safely at Tuzla. Cardoso believed that the results of the mission spoke for themselves: “We went in with 37 [personnel], and came back with 38.” The aircrews were physically and mentally drained after a long night over the territory. Stealth pilot Dale Zelko, meanwhile, was ferried by MC-130P Hercules back to Aviano.[30]

After the successful extraction of the stealth pilot, the other combat aircraft started to withdraw from Yugoslav air space before dawn. The bitter experience with Scott O’Grady – who was shot

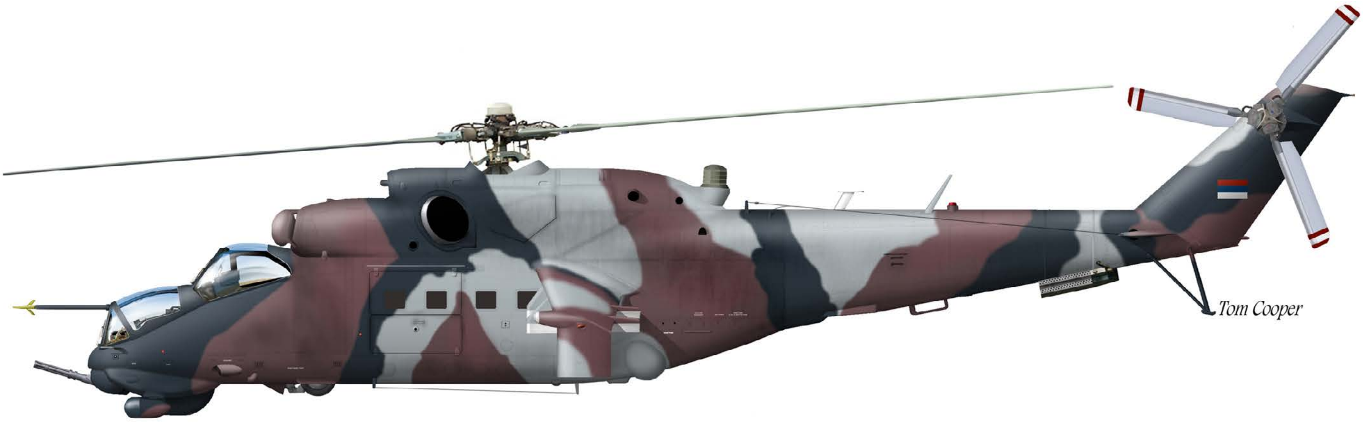
An A-10 belonging to the 81st Fighter Squadron, based at Spangdahlem in Germany, takes off from Aviano on a mission against targets in Yugoslavia on 5 April 1999. (National Archives Catalogue)

down over Bosnia in 1995 before being rescued – and two captured French Mirage pilots from the same conflict was not repeated: this time the stealth fighter pilot was saved. General Clark commented that the CSAR teams were even more precious than the stealth fighters, while President Clinton personally telephoned and thanked the commanders of the units that took part in Zelko's rescue.[31]

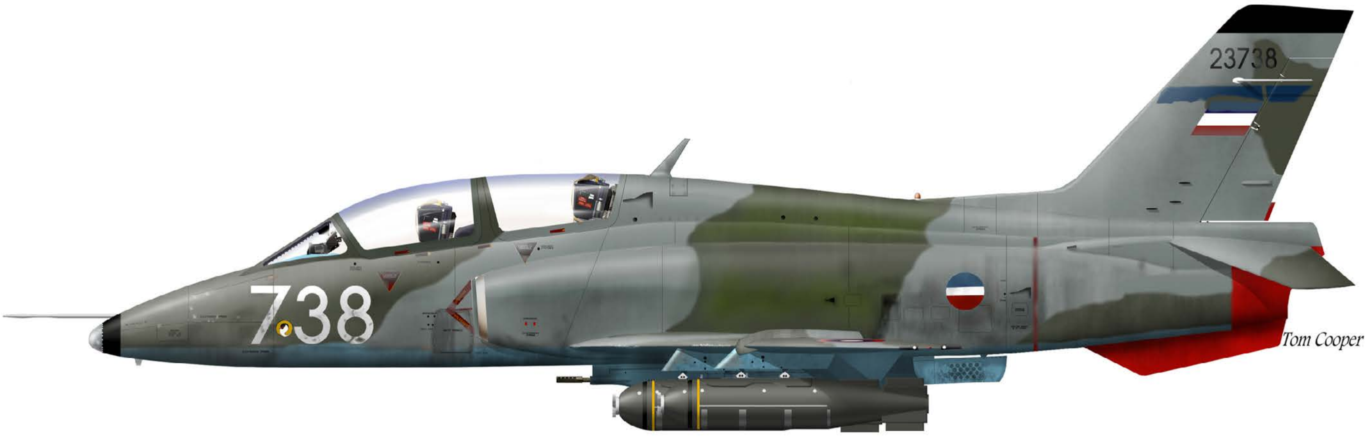
During the campaign and for several years after, there was much speculation about how the stealth fighter was brought down. Some tried to explain the event by stressing wrong planning, the absence of an EA-6B Prowler or the presence of alleged Serbian spies around Aviano. But the success of the Serbian RV i PVO Air Defence was deserved, despite the fact that they were surprised by their ability to shoot down a stealth fighter. The Americans were equally shocked upon hearing the news that night. Nevertheless, more stealth F-117s continued to operate and carry out missions over Serbia until the end of Operation Allied Force, often against the most heavily defended targets.

Six years later, however, after further analysis – including of experiences during Allied Force – it was decided that F-117A Nighthawks should be withdrawn from USAF service.

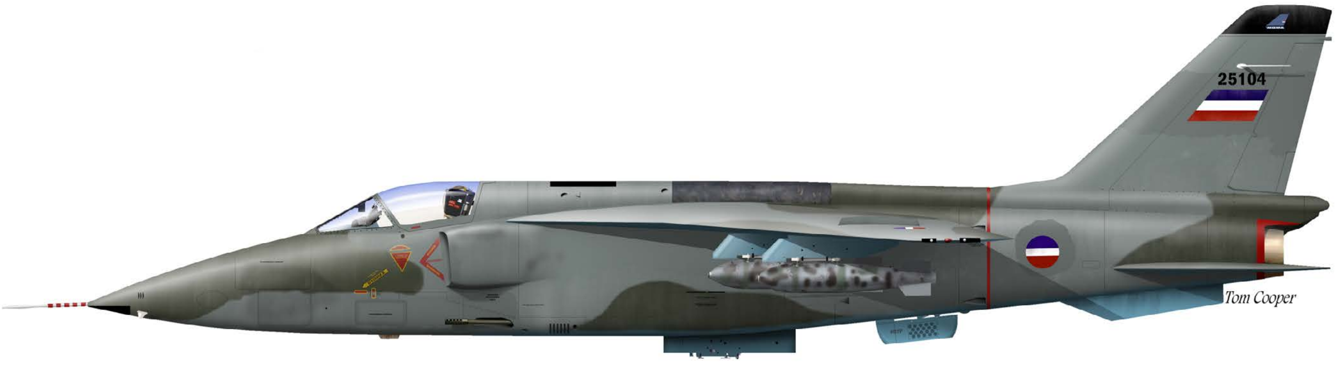
A single B-52H from the 2nd Bomber Wing, based at Barksdale AFB, returns to Fairford after a mission over Yugoslavia. USAF ground crew cheer the returning bomber during the earliest days of Operation Allied Force. (DoD)



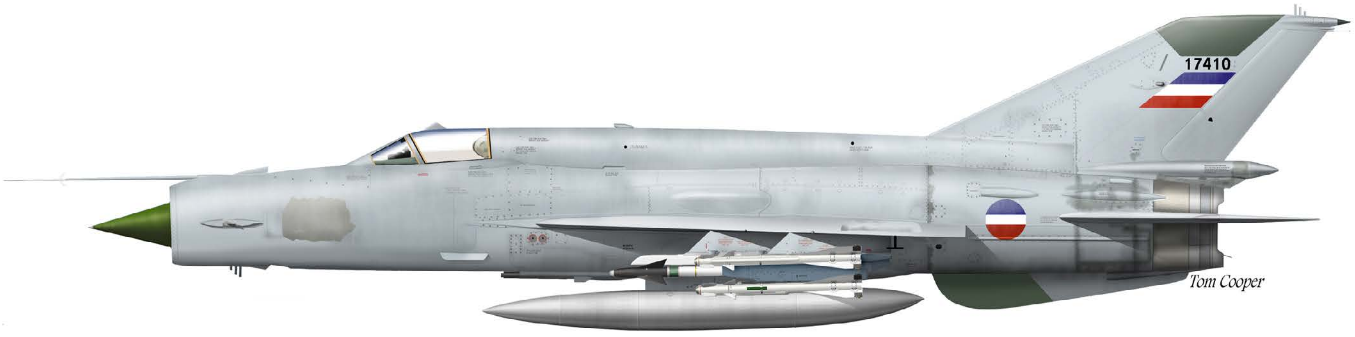
Two Mil Mi-24Vs were obtained from Ukraine in 1997 for the RDB JSO flying unit. They were unsuccessfully used over Kosovo and Metohija in operations during 1998, and – after 2000 – occassionaly by the MUP Srbije exercises. In 2006 both were transferred to RV i PVO but remained non-operational. The official explanation of the Serbian MoD was that because both were assembled from different airframes neither the Mil factory nor any other facilities was prepared to overhaul them. Other than the small insignia of the JSO unit, neither wore any kind of identification insignia. (Artwork by Tom Cooper)



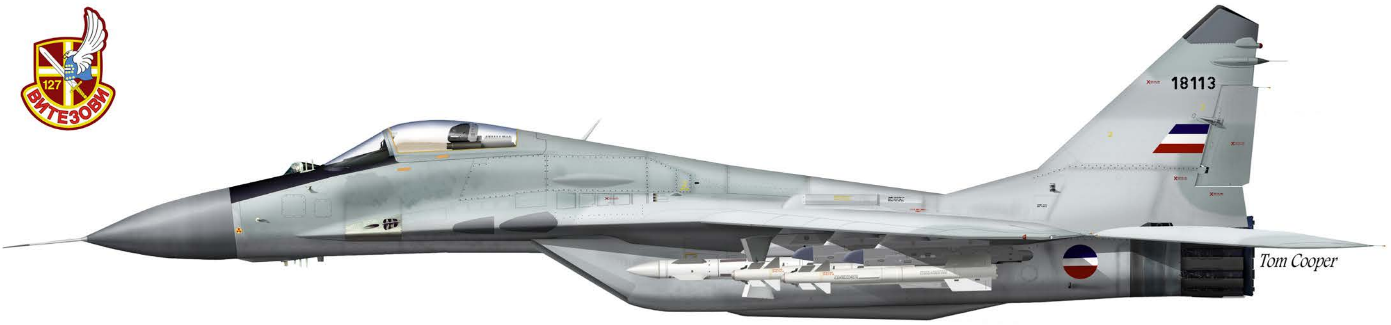
This Soko G-4 Galeb (a.k.a. 'Super-Galeb'), serial 23738, of the 229th Fighter-bomber Squadron (172nd Aviation Brigade, based at Golubovci AB, outside Podgorica) took part in one of the CAS sorties over Kosovo during the last week of March 1999. Its camouflage pattern of dark sea grey (BS381C/638) and dark green (BS381C/641) was badly worn out by that time. Unusually, it retained its large serial in white on the nose, and at least some traces of the former RV i PVO fin flash, while receiving the new national insignia and the crest of its former unit, 249th Fighter-Bomber Squadron, in the form of a small Cobra in black and white on a yellow disc (in between the first two digits of the serial). It is shown armed with four British-made Hunting BL755 CBUs, and a gun-pod under the centreline, as configured for the above-mentioned mission in March 1999. (Artwork by Tom Cooper)



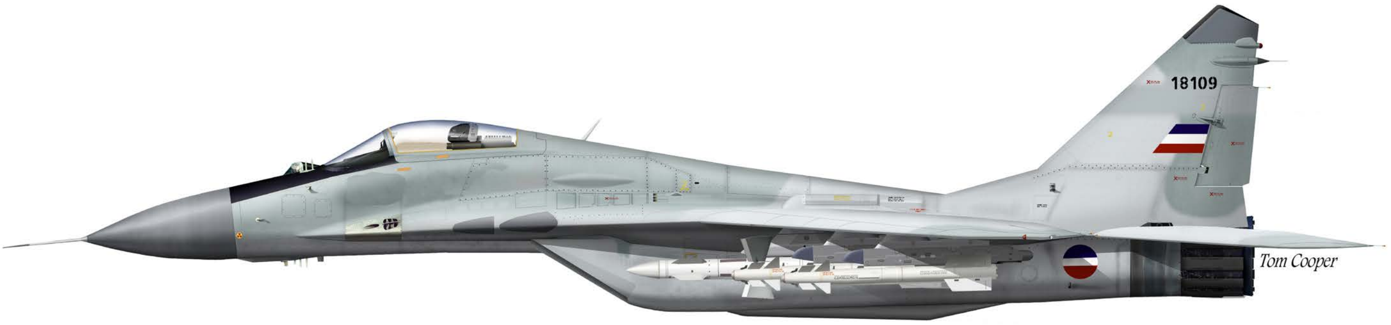
The surviving Soko J-22 Oraos of the Serbian air force all retained their camouflage pattern in dark sea grey and dark green by 1999, although this showed traces of the removal of their white three-digit serials on the nose and of former RV i PVO insignia, replaced with the new – so-called 'Pepsi' – Yugoslav tri-colore insignia. This jet, serial 25104 was operated by the 241st Fighter-Bomber Squadron (98th Fighter-Bomber Aviation Regiment), home-based at Ladjevci AB. On 25 March 1999, it was flown by the sqauadron CO, Major Zivata Djurić, in an attack on UCK positions in central Kosovo, in the configuration shown here, armed with four Yugoslav-made (but French-designed) FAB-250M79 general purpose bombs. Djurić was either shot down by ground fire, or crashed due to poor visibility, and killed. Note the locally manufactured chaff and flare dispenser below the rear fuselage. (Artwork by Tom Cooper)



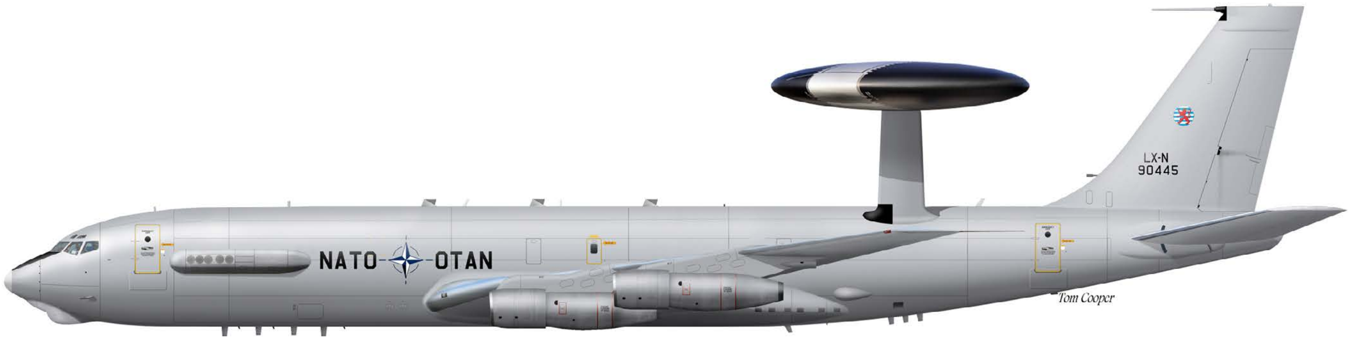
All of the MiG-21s still in service with the RV i PVO as of 1999 still wore their livery of the Russian colour RC336 overall (known in the West as ‘air superiority grey’), as applied before delivery, even though this was usually badly worn out. This jet, serial 17410 was a MiG-21bis-K (L-17K) construction number 75095299, the last example of that subvariant acquired by former Yugoslavia (in March 1983). It served with the 128th Squadron until 1990, and then with the 126th Squadron of the 204th Fighter Aviation Regiment, and – in 1992 – was used for test flights with twin launchers for R-60MK air-to-air missiles. Eventually, 17410 was destroyed during one of the NATO air strikes on Batajnica AB in March 1999. (Artwork by Tom Cooper)



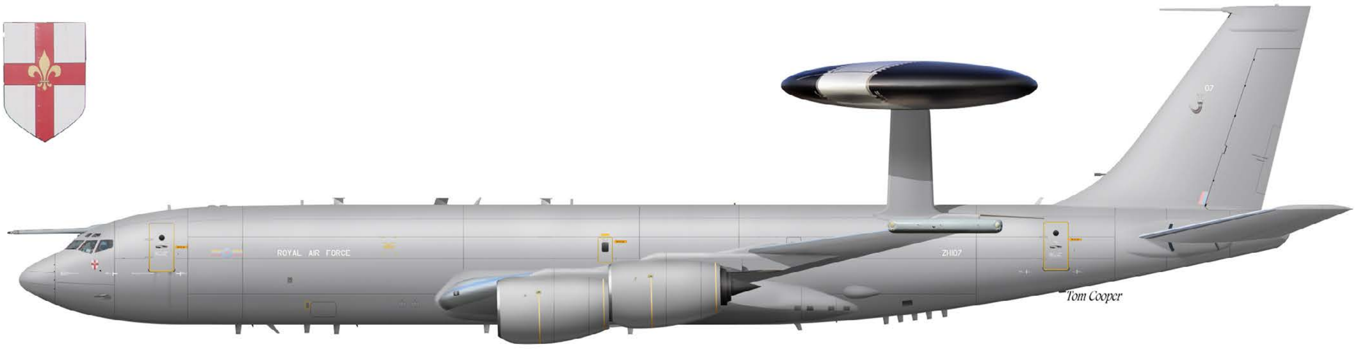
Worn out after a decade of intensive service, the Serbian MiG-29 fleet was in urgent need of an overhaul and included only a handful of flyable aircraft. This example (construction number 2960525142) entered service with the 127th Fighter Squadron (204th Fighter Aviation Regiment) on 20 April 1988 and received the serial number 18113. On 25 March 1999, Captain 1st Class Zoran Radosavljevic was scrambled in this jet to intercept a ‘high-flying target’: although his radar failed, the pursuit took Radosavljevic into the airspace of neighbouring Bosnia and Herzegovina, where he was shot down by an F-15C from the 48th Fighter Wing, USAF, resulting in the death of the pilot. The inset shows the crest of the 127th Fighter Squadron. (Artwork by Tom Cooper)



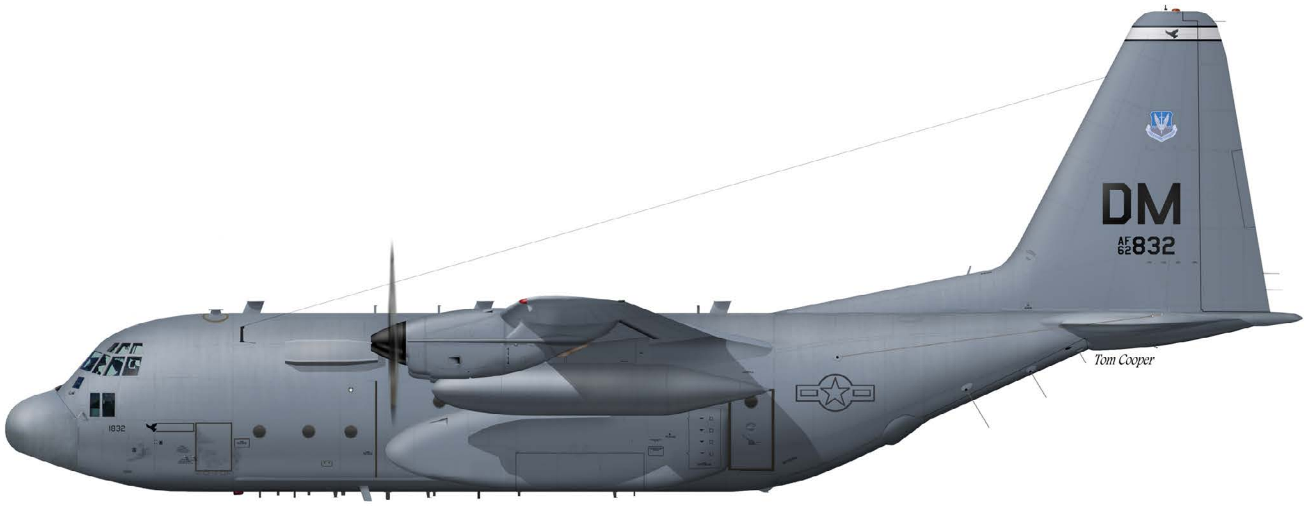
After the 127th Fighter Squadron had been stood down for almost a month, and had not launched a single combat sortie, Lieutenant Colonel Milenko Pavlovic scrambled on his own, on 4 May 1999, in attempt to intercept a NATO strike in the area of Valjevo, his hometown, which the previous night was hit by an earthquake. Pavlovic piloted the MiG-29 construction number 2960525102, which was introduced to service with the 127th Fighter Squadron on 28 December 1987 and received the serial number 18109. Late on the scene, Pavlovic seemingly flew in the direction of an E-3D Sentry AWACS aircraft of the RAF, underway over Albania, which in turn vectored two F-16CJs of the 77th EFS – underway at the end of the NATO formation – to intercept. While trying to engage enemy fighters, Pavolovic came under simultaneous attack from friendly ground forces and an AIM-120 air-to-air missile, was shot down and killed. (Artwork by Tom Cooper)



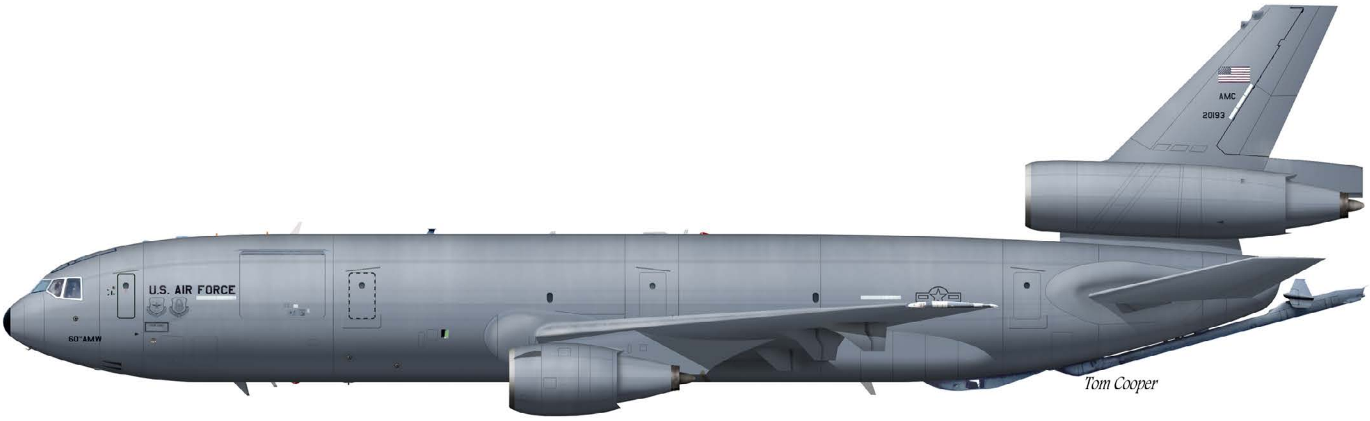
NATO originally acquired 18 TF-33-powered Boeing E-3A Sentry AWACS aircraft, starting in January 1982. All were (and remain) registered in Luxembourg (which is the reason for the registration LX-N90445 applied on the fin of this example, in addition to its service title applied behind the cheek ESM antennae), and are operated by Number 1, 2 and 3 Squadrons of NATO's E-3 Component, based at Geilenkirchen. By 1999, 13 were upgraded to the standard illustrated here. During Operation Allied Force, several were forward deployed to Trapani (four), Preveza (two), and Aviano ABs. All were painted in overall Boeing Gray 707 (FS16515). Together with E-3 detachments from the British, French and US air forces, they played the crucial role in commanding and controlling the entire NATO effort over Yugoslavia. (Artwork by Tom Cooper)



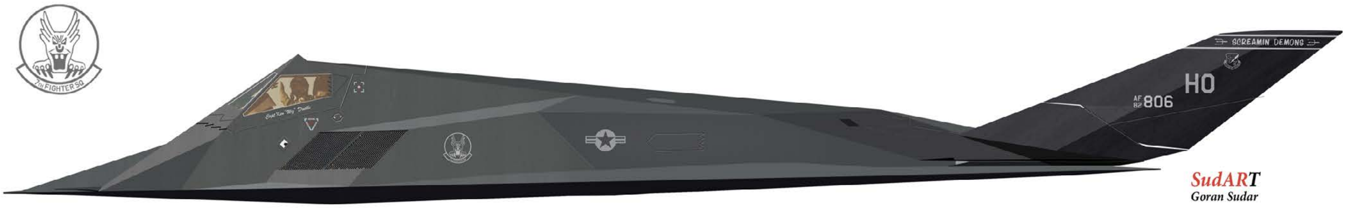
Belonging to the RAF, this Boeing E-3D AEW Mk 1 Sentry – serial number ZH107 – was one of three drawn from Nos. 8 and 23 Squadrons, along with their pooled crews (the other two were ZH104 and ZH106) and deployed with the NATO Sentry Detachment at Aviano by 25 March 1999. Contrary to the older, NATO-operated E-3As, they were powered by distinctive (and more efficient) CFM-56 engines and received wingtip installed ESM antennae. Notably they are of a slightly darker overall colour, Dark Compass Ghost Gray (FS36320), than that worn by NATO- and USAF-operated Sentries. Note also the IFR-probe installed above the right upper side of the cockpit. (Artwork by Tom Cooper)



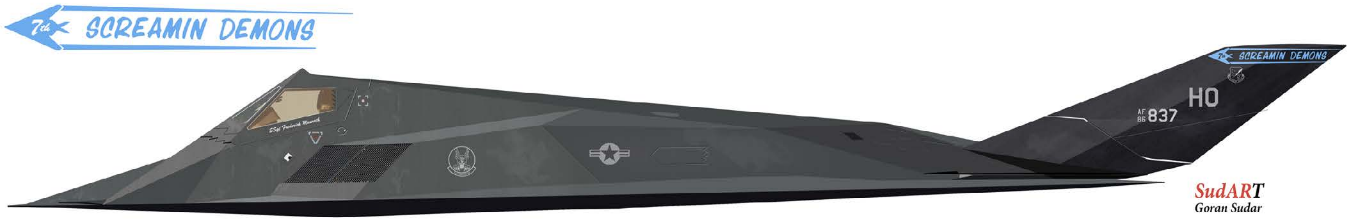
Originally designated C-130E-II, the EC-130E (ABCCC) emerged during the wars in Southeast Asia of the mid-1960s, as an aircraft equipped to command and control the air battle using information supplied by all means of reconnaissance. For this purpose, the C-130 transport was equipped with the ASC-15 command battle staff container inserted in the cargo hold, the electronics of which had to be cooled with the help of large ram air intakes on either side of the fuselage. A true 'forest' of UHF/VHF communication antennae down the upper and lower fuselage, and large HF probes, served the installed communication systems. By 1999, ABCCCs were upgraded through the installation of Allison T56-A-15 engines and ABCC III containers, including satellite communication gear, JTIDS data links and secure communication systems. After playing a crucial role during Operation Deliberate Force in 1995, at least three aircraft of the 42nd ACCS/355th Wing were deployed to Aviano in 1999, including serials 62-1832 (illustrated here), 62-1857 and 62-1863. (Artwork by Tom Cooper)



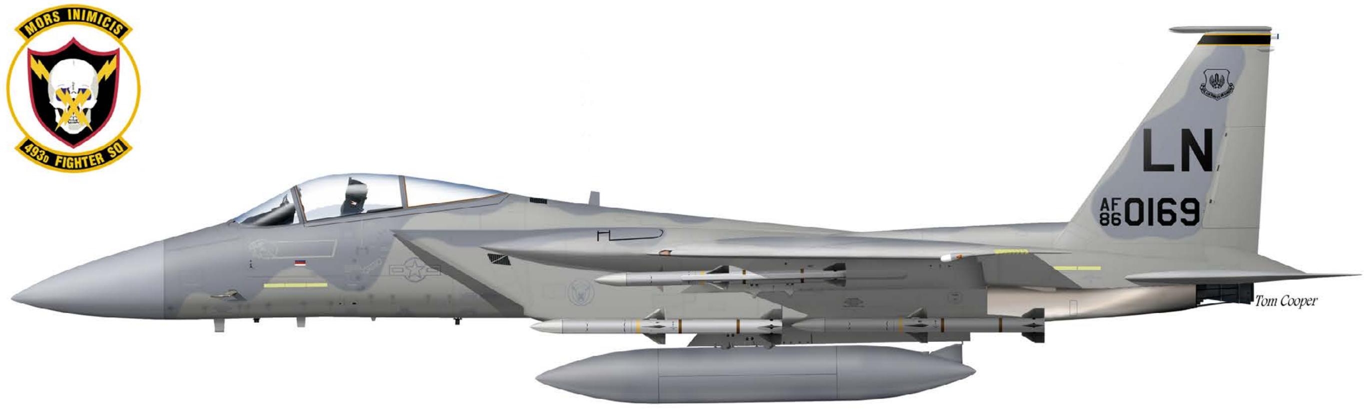
As previously over Iraq in 1991, the entire Operation Allied Force became possible thanks to the availability of the large tanker-fleet of the US Air Force. As well as the venerable Boeing KC-135s, this included much bigger McDonnell Douglas KC-10A Extenders. A dozen of these were operated by the 305th Air Mobility Wing/92nd Air Expeditionary Wing from Moron AFB in Spain, while the example shown here – serial (8)20193 – was one of at least 15 rotated through the 60th Air Expeditionary Wing at Rhein-Main AFB in Germany. In turn, this wing was based on the HQ of the 60th Air Mobility Wing, home-based at Travis AFB, and organised into two squdrons, one equipped with KC-10As and the other with KC-135s – drawn from several different units of the USAF, AFRES and the ANG, all on temporary duty. As usual for the 1990s, the aircraft was painted in Neutral Gray (FS36173) overall, and wore only toned-down markings. (Artwork by Tom Cooper)



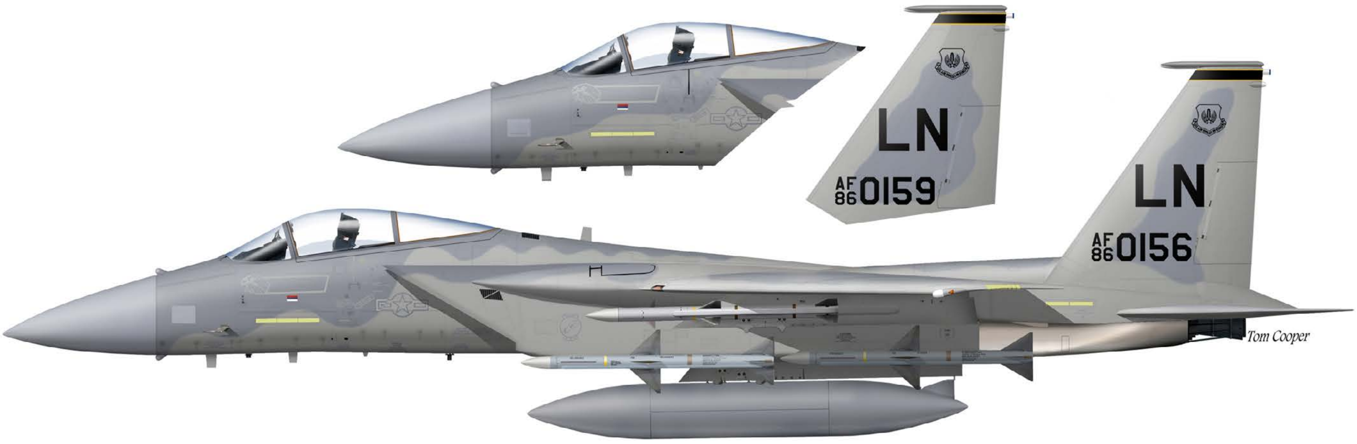
Aircraft types incorporating stealth technology were heavily involved in Operation Allied Force. Initially forward deployed at Spangdahlem AFB in Germany, 12 Lockheed F-117As were very often the first fighter-bombers in many of NATO's early air strikes. This example – F-117A Nighthawk serial 82-806, from the 8th EFS (49th Fighter Wing), home-based at Holloman AFB – made news when it was shot down by a V.601 surface-to-air missile fired by the 3rd Battalion, 250th Missile Brigade RV i PVO, north of Belgrade, at 20.42hrs of 27 March 1999. Its pilot, Lieutenant Colonel Dalel Zelko, was recovered a few hours later. (Artwork by Goran Sudar)



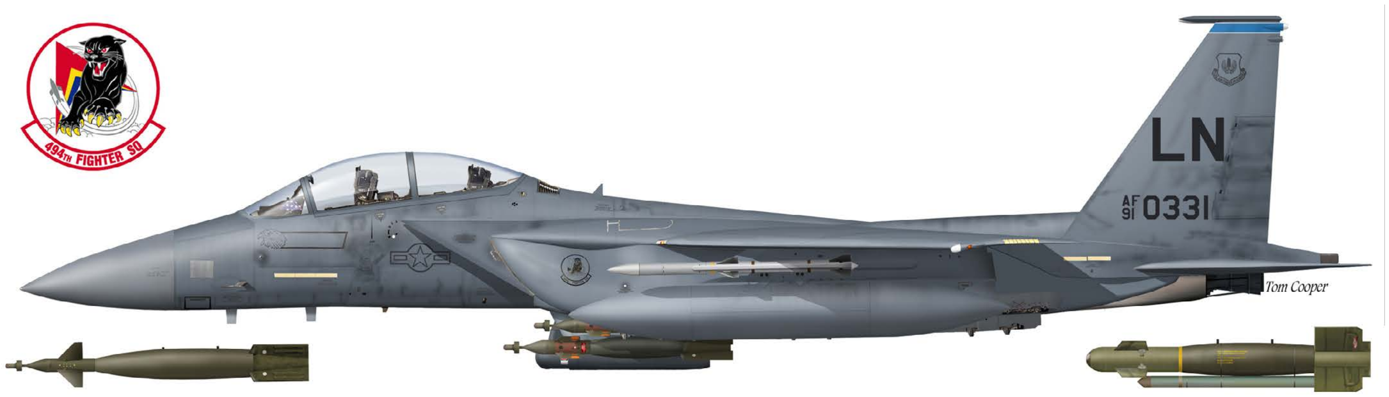
After the first loss of a stealth aircraft in combat, the crews of the 49th FW modified their tactics and usually avoided enemy fire, although operating against some of the best-protected targets in northern Serbia. However, the Serbian air defences continued operating with great skill throughout the conflict, and on 30 April 1999 this jet – serial 85-837, from the 7th EFS 'Screamin Demons' – was badly damaged by another V.601 of the 3rd Battalion, 250th Missile Brigade. This time, the pilot managed to nurse the jet all the way back to Spangdahlem. (Artwork by Goran Sudar)



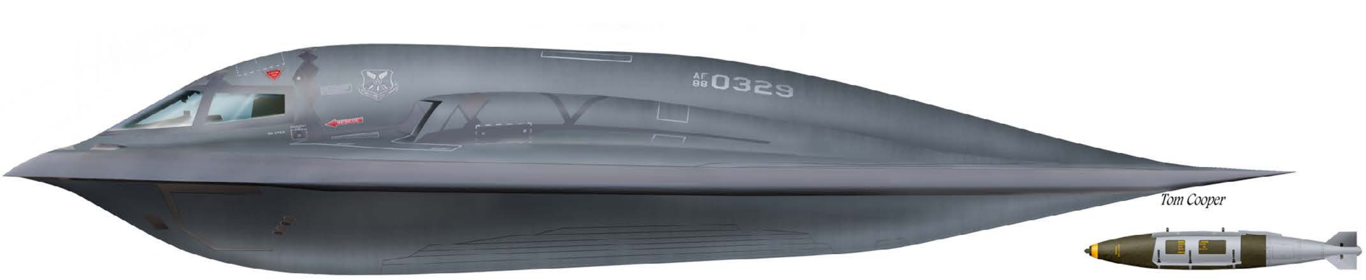
493rd EFS had maintained a sizeable detachment at Aviano AB in northern Italy on an on-off basis since 1992 but by the time of Operation Allied Force its F-15Cs were deployed at Cervia AB, further south. The squadron provided top cover for all the strike packages during the first night of Operation Allied Force, and for up to two CAP-stations over Bosnia and Herzegovina. This F-15C MSIP-II – serial 86-0169 – was flown by Lieutenant Colonel Cesar 'Rico' Rodriguez when he shot down a single MiG-29 during the opening night of the war. Notable is its – as of 1999 still unusual – weapons configuration consisting of six AIM-120 AMRAAM air-to-air missiles (in addition to two AIM-9M Sidewinders, installed on the inboard side of the underwing pylons), and a kill marking applied in the form of a 'Serbian flag' but with the colours in the wrong order (blue, red and white, instead of red, blue and white for Serbia, or blue, white and red for Yugoslavia). The inset shows the crest of the 493rd Fighter Squadron. (Artwork by Tom Cooper)



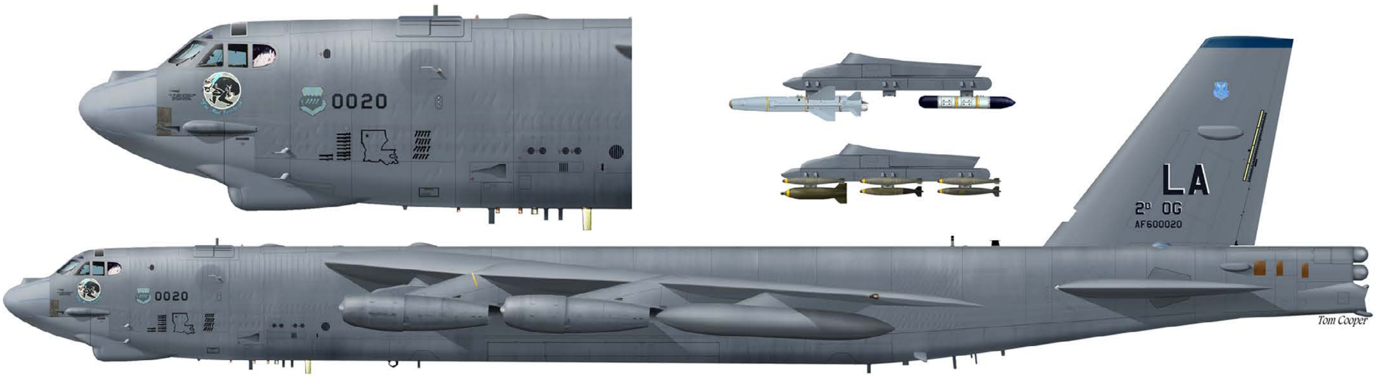
As mentioned above, the F-15C MSIP-IIs of the 493rd EFS were also flying CAPs over eastern Bosnia and Herzegovina, protecting the UN peacekeepers there. One of these aircraft, serial number 86-1056, piloted by Captain Jeff 'Claw' Hwang, intercepted and shot down the MiG-29s piloted by Major Perić and Captain Radosavljevic during the afternoon of 26 March 1999, using two AIM-120 air-to-air missiles. The remaining medium-range missiles on his F-15C were all AIM-7Ms, in addition to the usual two AIM-9Ms installed on the inboard side of the underwing hardpoints. In this case the kill marking shows the Serbian national colours in the right order: as was the case with the F-15C MSIP-II serial 86-0159, shown inset, flown by Captain Mike 'Dozer' Shower when he shot down the MiG-29 piloted by Major Nebojsa Nikolic, while protecting a strike package including four F-16CJs and several F-117As late on 24 March 1999. (Artworks by Tom Cooper)



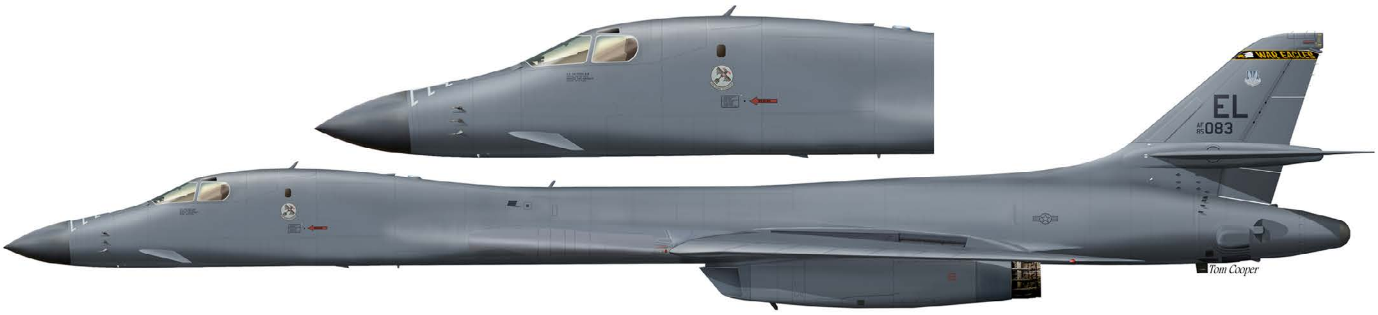
A total of 26 F-15Es drawn from the 492nd and 494th EFS – originally from the 48th FW, but temporarily assigned to the 31st Expeditionary Air Wing at Aviano AB – served as the 'iron fist' of the USAF's involvement in Operation Allied Force. This example, serial 91-0331 (construction number 1238) is shown in the main configuration used in this conflict, including four GBU-12 LGBs installed on forward stations under the FAST-pack, a pair each of AIM-120 and AIM-9M Sidewinders on underwing pylons, and a combination of AN/AAQ-13 and AN/AAQ-14 LANTIRN pods under the intakes. Insets show other weapons deployed by the type, including the GBU-10 2,000lb/1,000kg laser-guided bomb, and the AGM-130 (essentially a rocket-powered GBU-15A 2,000lb/1,000kg electro-optically-guided glide-bomb). The crest of the 494th FS, to which this jet was assigned, is also shown inset. (Artwork by Tom Cooper)



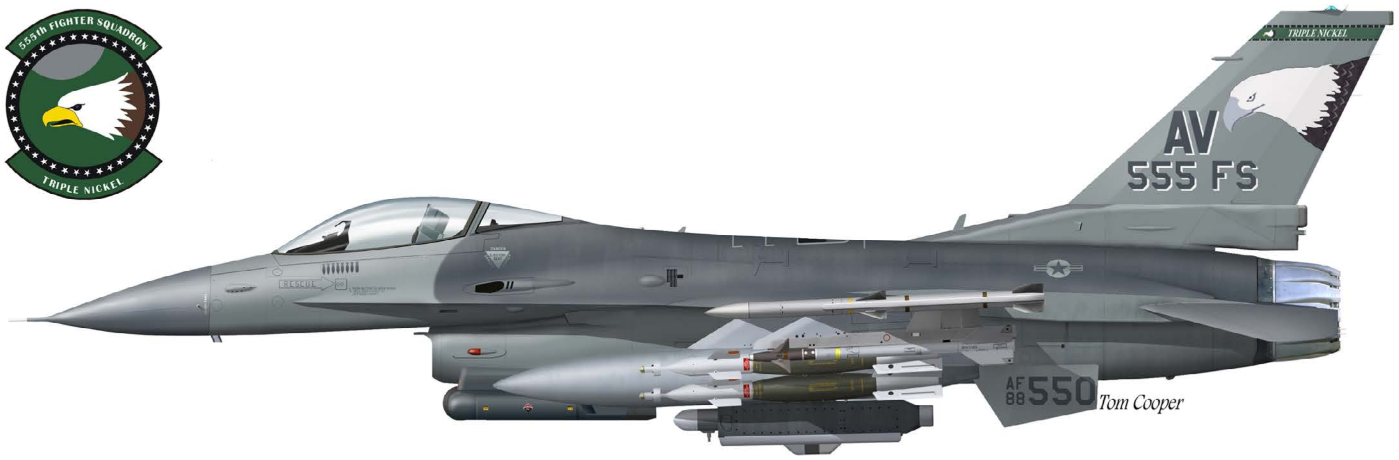
A total of six B-2As of the 393rd Bomber Squadron, 509th Bomber Wing, were operational as of 1999 and all deployed from Whiteman AFB in Missouri, only, during the conflict. This artwork shows the aircraft with serial number 88-0329, named "Spirt of Missouri", the very first operational aircraft of this type – and the one widely claimed as shot down by Serbian sources ever since. The primary weapon of the B-2As was the brand new GBU-31 Joint Direct Attack Munition (JDAM; essentially a Mk.84 General Purpose 2,000lb/1,000kg bomb with a GPS-guidance kit attached to the rear), one of which is shown inset, and up to 16 of which could be carried in the aircraft's two internal bomb bays. (Artwork by Tom Cooper)



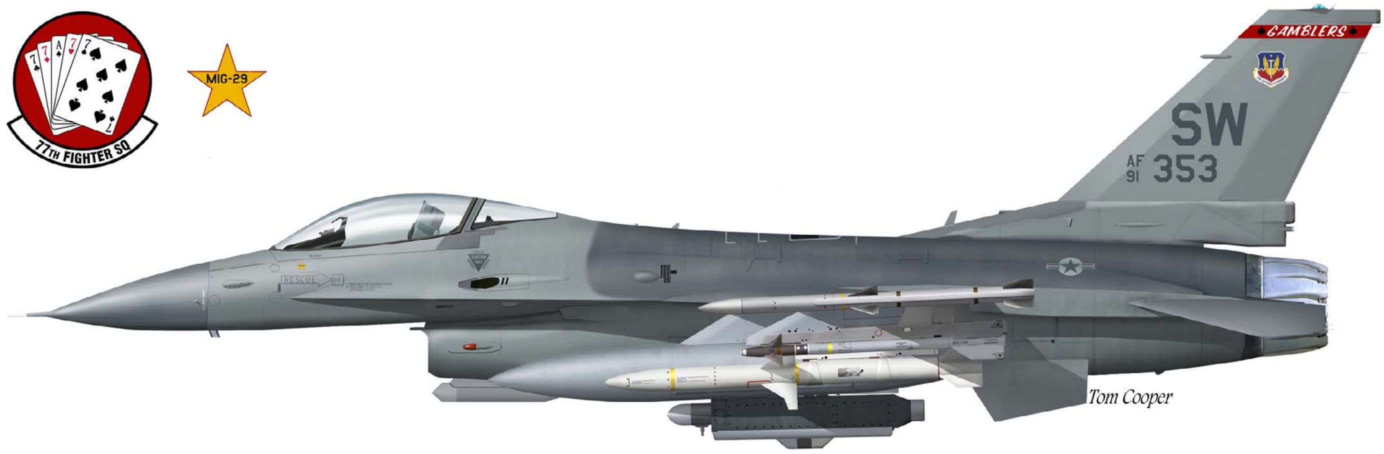
Forward deployed at RAF Fairford, and organised into the 2nd Expeditionary Operations Group, the centrepiece of the USAF's bomber force consisted of 11 B-52H heavy bombers drawn from 2nd and 23rd BS/5th BW based at Minot AFB, and 11th, 20th and 96th BS/2nd BW from Barksdale AFB, Louisiana. Their weapons configurations ranged from 8 AGM-86 CALCM (usually carried internally), to up to 45 Mk.82s (27 internally and 18 on external pylons), to 3 AGM-142 Popeye (plus their guidance pod, all on external pylons), and 61-0002 was also seen armed with at least one GBU-10. Illustrated here is the B-52H 60-0020, nicknamed 'The Mad Bolshevik' from 20th BS/2nd BW, which by May 1999 displayed mission marks for 10 CALCM-strikes and 20 bomb strikes. The centre insets show some of the underwing weapons configurations noted, including one with an AGM-142 Popeye (and its guidance pod), and one with eight Mk.82 general purpose bombs and one SUU-30/A cluster bomblet dispenser. (Artwork by Tom Cooper)



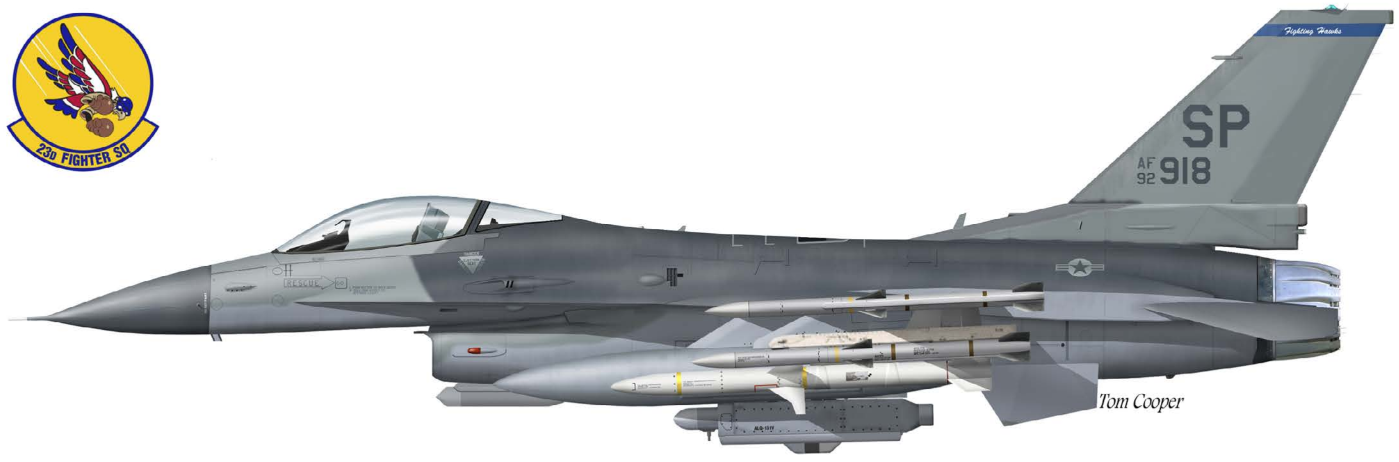
Four B-1B bombers of 77th BS/28th BW, and one from 37th BS/28th BW from Ellsworth AFB were also assigned to the 2nd Expeditionary Operations Group at RAF Fairford during Operation Allied Force. Their primary weapons configuration consisted of 84 Mk.82 bombs, all carried internally. The Mk.82s were deployed to saturate several Serbian air bases by obliterating their runways, taxiways and infrastructure. The B-1Bs wore no personal insignia during the campaign: mission symbols were applied on the nose gear doors only. The example illustrated here was the B-1B 85-0083 (later nicknamed 'Overnight Delivery'), known to have flown 13 sorties: its crews claimed the destruction of four MiG-21s and seven helicopters on the ground. (Artwork by Tom Cooper)



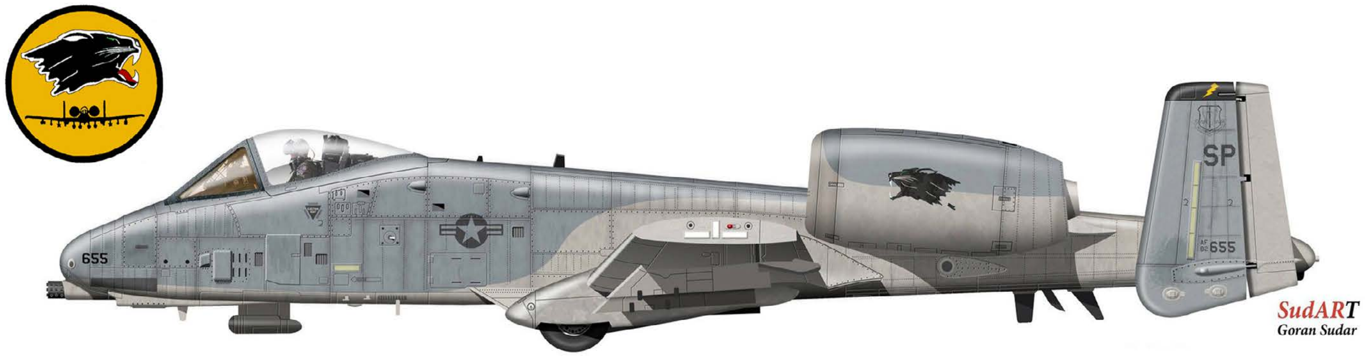
The centrepiece of the entire US effort early during Operation Allied Force was the Aviano-based 31st Fighter Wing. While massively expanded during the campaign into expeditionary status, this originally included only 510th and 555th Fighter Squadrons, each equipped with 18 F-16CG/DG Block 40s. Standard weapons configuration for most of the campaign consisted of AN/AAQ-13 and AN/AAQ-14 LANTIRN pods installed either side of the intake, ALQ-131 ECM-pods under the centreline, up to four GBU-12 LGBs, and a pair each of AIM-120s and AIM-9Ms. Shown here is the F-16CG Block 40D jet serial number 88-550, which had served with the 70th FS (Moddy AFB) until 1993, and then with the 526th FS (Ramstein AB) before being assigned to the 555th FS in March 1994. A year later, it was assigned to the CO 'Triple Nickel' Squadron, Lieutenant Colonel David Goldfein and went into the war marked accordingly. It was shot down by V.601s of the 3rd Battalion, 250th Missile Brigade RV i PVO, on 2 May 1999, still wearing this livery. (Artwork by Tom Cooper)



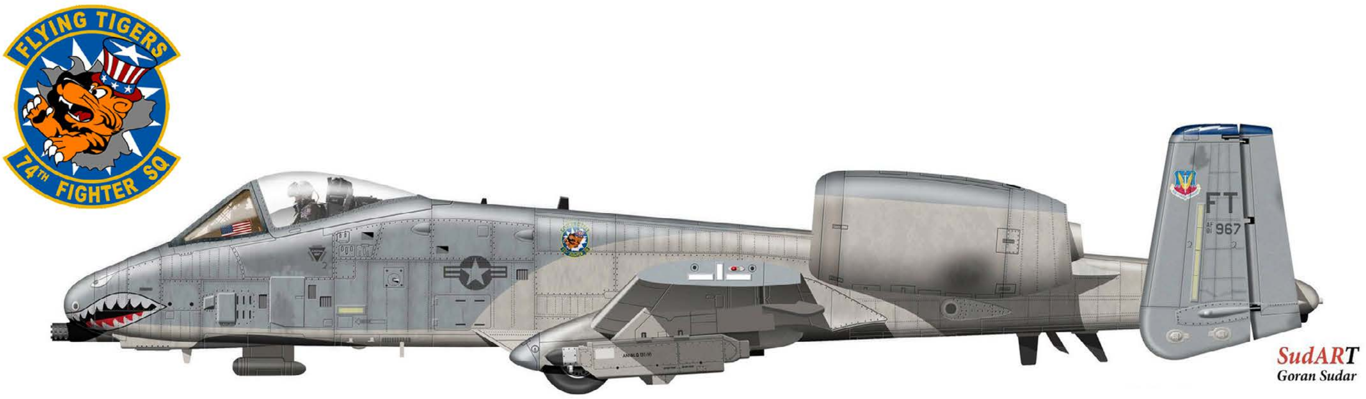
The 77th, 78th and 79th FS of the Shaw AFB-based 20th FW, deployed a total of 22 F-16CJ/DJs as the 78th EFS to Aviano during Operation Allied Force. The F-16CJ was a dedicated SEAD subvariant, equipped with the ASQ-213 HARM Targeting System pod (HTS, or 'Weasel in the Can', installed low on the right side of the intake) and primarily equipped with AGM-88 HARM anti-radar missiles. The jet shown here belonged to Block 50C and wore the serial number 91-0353. Previously it had served with 23rd FS at Spangdahlem, and since April 1994 had been assigned to 77th FS. On 4 May 1999 it was flown by Lieutenant Colonel Michael H. Geczy of 78th EFS who shot down the MiG-29 flown by CO of the 204th Fighter Regiment, Lieutenant Colonel Milenko Pavlovic. Correspondingly, it received a kill marking in the form of a small yellow star below the canopy. Inset is shown the patch of the 77th Fighter Squadron 'The Gamblers'. (Artwork by Tom Cooper)



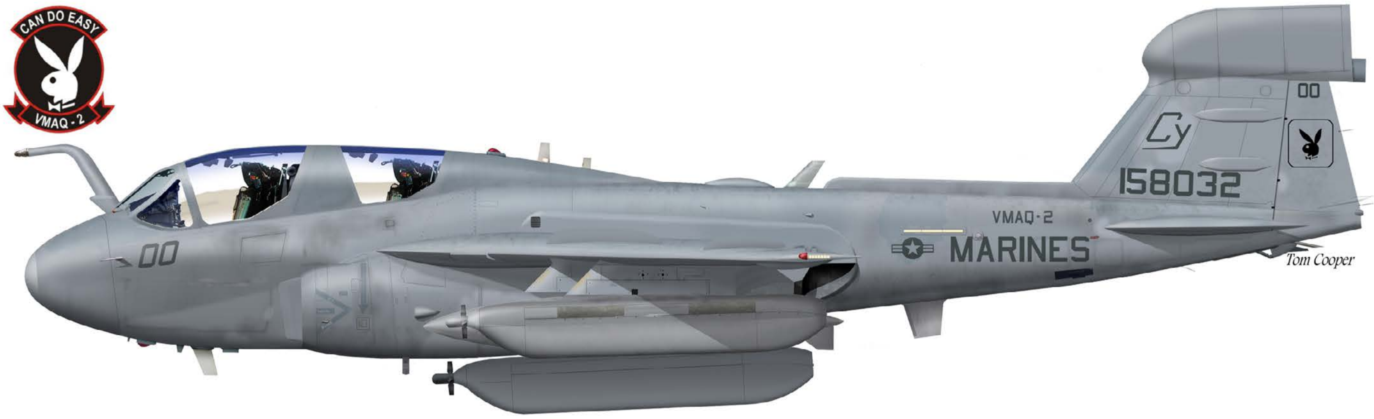
The third fighter wing of the USAF to deploy F-16 Fighting Falcons during Operation Allied Force was the 52nd FW at Spangdahlem AB, Germany, which consisted of 22nd and 23rd Squadrons. They operated 25 F-16CJs from Aviano and Spangdahlem between February and June 1999. Shown here is the AGM-88 HARM-equipped F-16CJ serial number 92-918 (Block 50P delivered to the unit in May 1995), from the 23rd FS. One of the jets of this squadron was flown by Captain Sonny P Bilkinsop, who earned himself the Silver Star for action during the air strike on Ladjevci AB on 2 May 1999. Note the configuration including four AIM-120 AMRAAM air-to-air missiles, two AGM-88 HARM anti-radar missiles, but no Sidewinders. Inset is shown the insignia of the 23rd FS 'Fighting Hawks'. (Artwork by Tom Cooper)



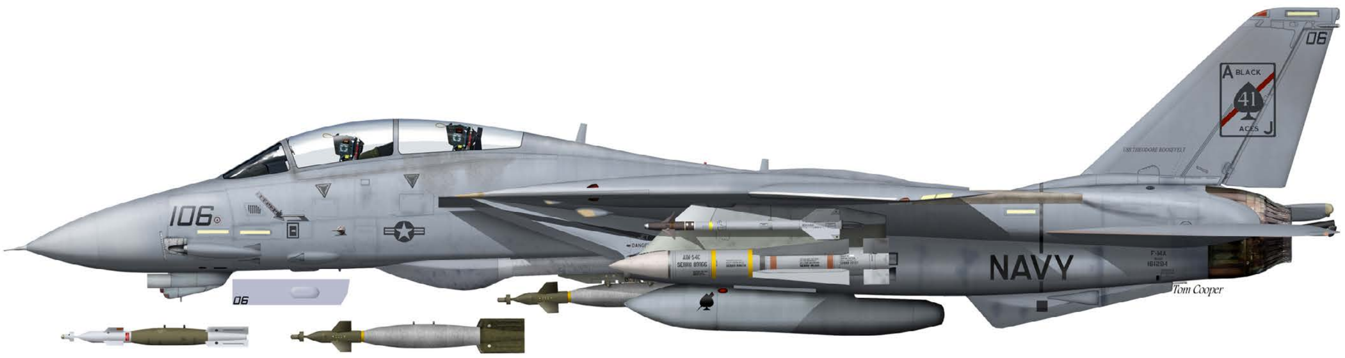
As of 1999, most Fairchild A-10A Thunderbolt IIs still in service with the USAF were painted in light ghost gray (FS36375) on undersurfaces and sides, dark ghost gray (FS36320) on top surfaces and sides of the front fuselage, and had a fake canopy applied in gunship gray (FS36118) on the underside of the forward fuselage. This Thunderbolt – serial number 82-655 – was assigned to the Aviano-based 81st EFS (patch shown inset), early during Operation Allied Force. A pilot from this unit, Captain John A. Cherrey, earned himself a Silver Star for action during the recovery effort for the downed F-117A pilot on 27 March 1999, in the wider Srem area, north-west of Belgrade. The aircraft crashed on 27 June 2002 in the forest near Rambeulliers in France and the pilot was killed in the accident. (Artwork by Goran Sudar)



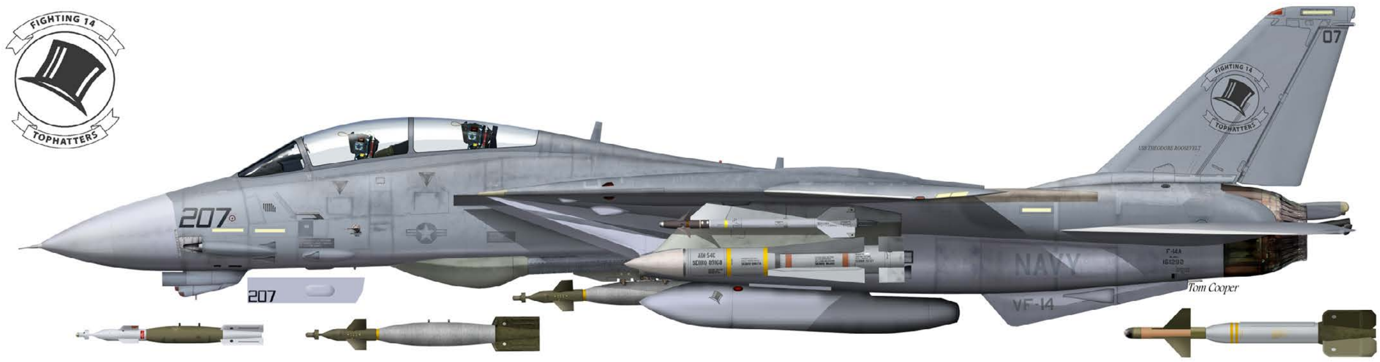
Another notable A-10A of Operation Allied Force was this example, serial 81-967. While assigned to the 10th TFW, based at RAF Bentwaters in the 1980s, it took part in Operation Desert Storm. As of 1999, it was assigned to the 74th FS, 23rd Wing, home-based at Pope AFB. Forward deployed to Aviano AB, from 13-14 April 1999, it later moved to Gioa del Cole. On 2 May 1999, it was hit and had much of its engine cowling damaged while underway in a strike against Serbian forces in the town of Gnjilane in Kosovo. The pilot, Major "Goldie" Haun, managed to nurse it to a safe landing at Skopje in Macedonia. Notably, in addition to Mk.82 bombs, AGM-65 Maverick missiles and other external weaponry, during Operation Allied Force A-10As regularly carried ALQ-131 or similar ECM-pods on the left outboard underwing pylon. (Artwork by Goran Sudar)



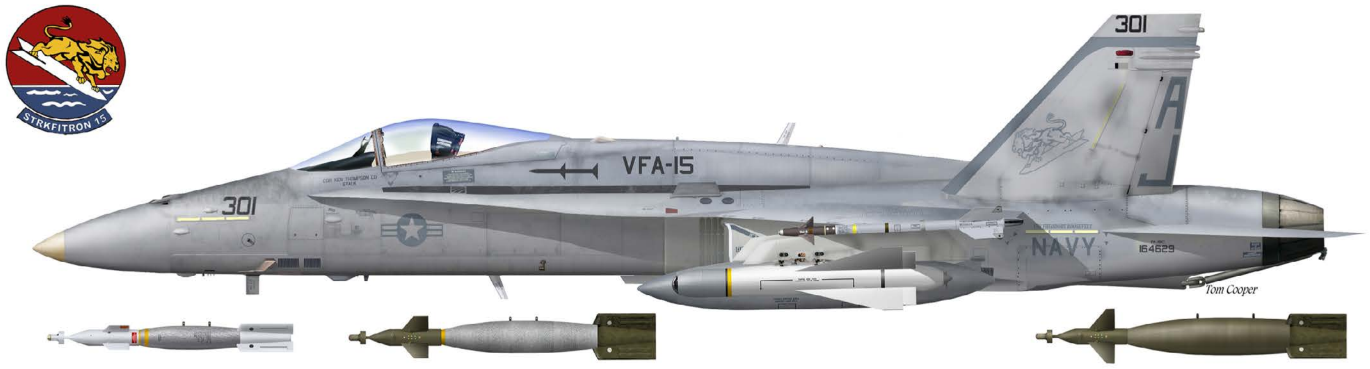
The VMAQ-2 squadron of the US Marine Corps, home-based at MCAS Cherry Point, deployed all of its five Grumman EA-6B Prowlers to Aviano AB: as with 20 other Prowlers from VMAQ-1, VMA-4, VAQ-134, VAQ-138, VAQ-140, VAQ-209 and VAQ-132, all were assigned to the 31st EFW, USAF. This example wore the US Navy's AerNo. 158032, the tailfin-code CY and the unit insignia (the patch version of which is shown inset) on the fin, while the double zero applied under the front cockpit identified it as the jet nominally assigned to the unit commander. For Operation Allied Force, EA-6Bs from Aviano usually carried 'only' three ALQ-99 ECM-pods, and two drop tanks: by the end of that campaign VMAQ-2 had flown a total of 2152.5 hours in combat, in 465 combat sorties and fired 57 AGM-88 HARMs. (Artwork by Tom Cooper)



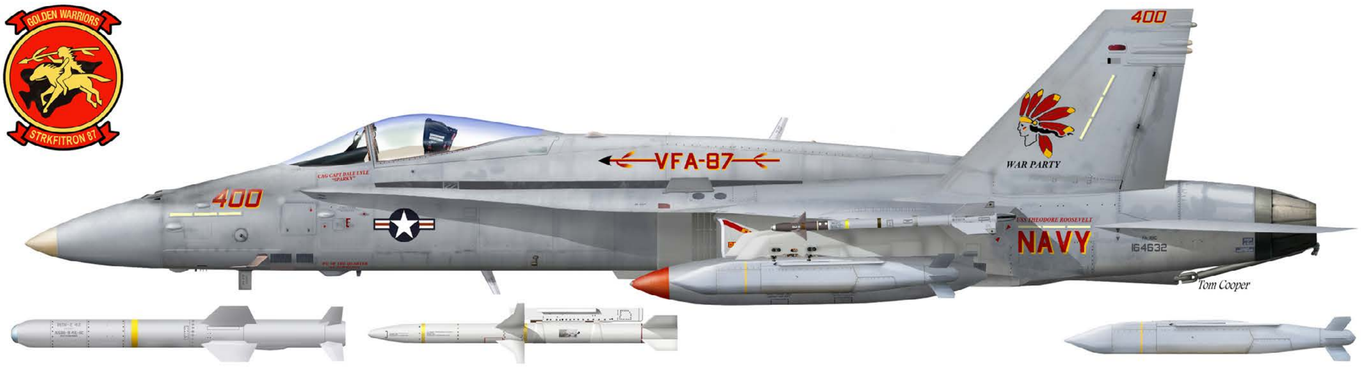
The nuclear-powered carrier USS *Theodore Roosevelt* (CVN-71) was not originally planned to take part in Operation Allied Force, and thus had to be rushed all the way from the Persian Gulf once it became obvious that the Serbs were not going to give up easily. Although joining the campaign only on 7 April 1999, aircraft of its CVW-8 still managed to fly at least 10 percent of all the combat sorties of the war. This illustration shows the Grumman F-14A Tomcat AerNo. 161294, which soldiered through this campaign with modex AJ106, assigned to the navy fighter squadron VF-41 Black Aces. On 2 May 1999, while piloting this jet, Lieutenant-Commander Brian B Brurud earned himself the Silver Star during an air strike on targets in the heavily defended Podgorica area. (Artwork by Tom Cooper)



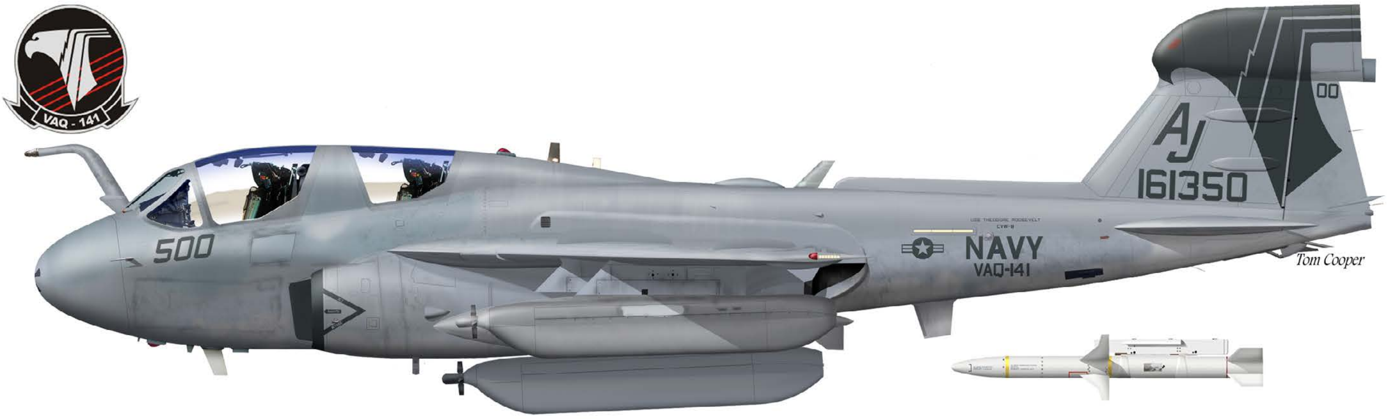
Due to the lack of units equipped with McDonnell Douglas F/A-18 Hornets, CVW-8 sailed for its Mediterranean and Indian Ocean cruise of 1999 with two squadrons equipped with F-14A Tomcats. The second of these was VF-14 Tophatters. Although flying some of the oldest F-14s in the fleet, this squadron became the first Tomcat unit to introduce the digital flight control system on the type, the first with crews trained to serve as forward air controllers, and the first to deploy in combat GBU-12 (lower left corner, based on Mk.82 warhead), GBU-16 (based on Mk.83 warhead), and GBU-24 (based on BLU-109 warhead) laser-guided bombs with help of the LANTRIN targeting pod. The Tophatters distinguished themselves highly in Operation Allied Force, but in turn their jets were showing heavy wear and tear by the end of the campaign and it is clear that this example received a replacement radome from another Tomcat. (Artwork by Tom Cooper)



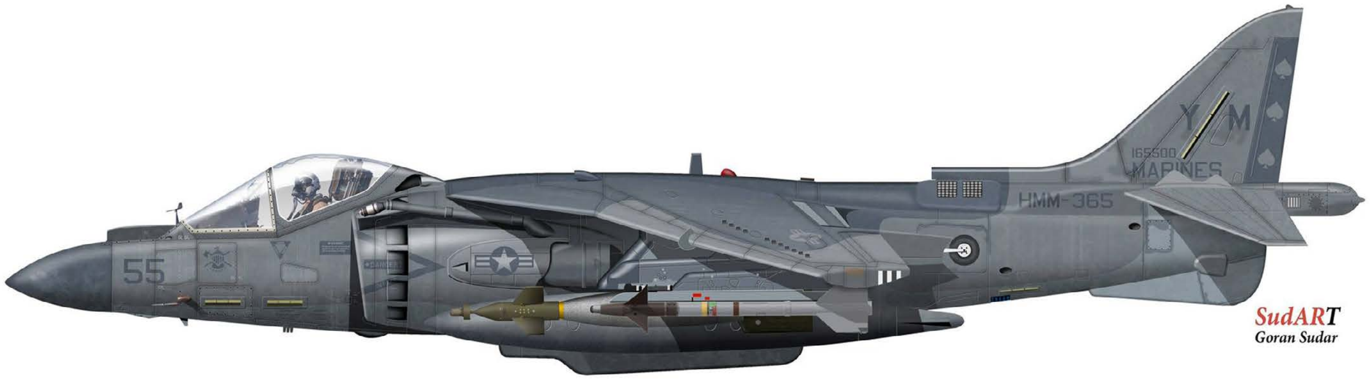
The first of the two squadrons flying F/A-18C Hornets and assigned to CVW-8 was the VFA-15 Valions. While wearing the badly worn out tactical paint scheme – consisting of medium ghost gray on top surfaces and light ghost gray on sides and undersurfaces – this 'Rhino', AerNo. 164629, Modex AJ301 – is shown with typical insignia of the squadron at the time. A selection of the PGMs typically deployed by this unit in over 1,100 combat sorties it flew is also shown: (from left to right) GBU-12, GBU-16 and GBU-10, while shown on the outboard underwing pylon is an AGM-62 Walleye II electro-optically guided bomb. (Artwork by Tom Cooper)



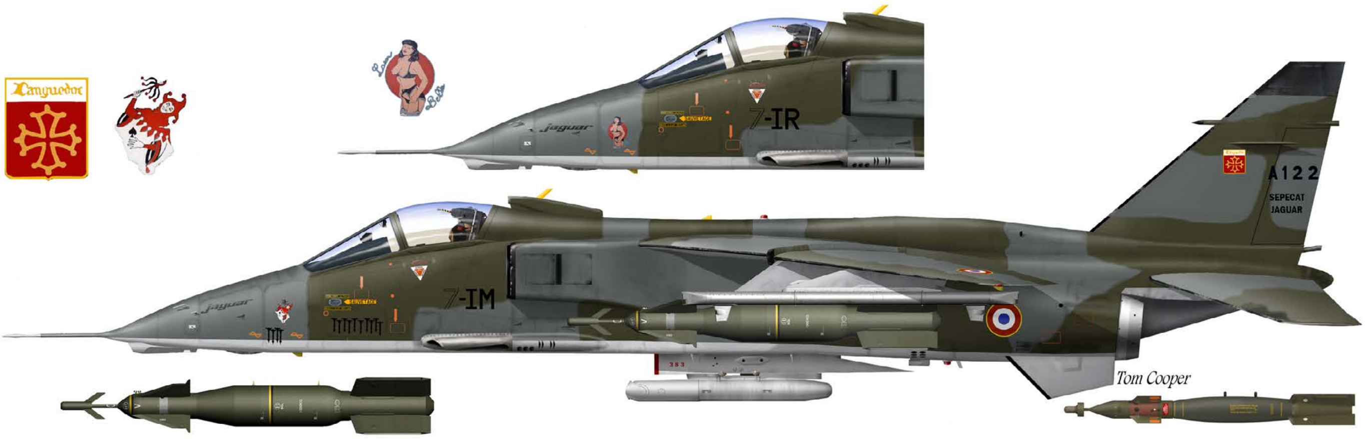
While most of the USN aircraft of the 1990s wore rather dull, 'grey on grey' camouflage and markings, aircraft nominally assigned to squadron- and wing-commanders were still painted colourfully. Illustrated here is F/A-18C AerNo 164632, Modex AJ400, which wore the colourful insignia of VFA-87. This squadron was also assigned to CVW-8, aboard USS *Theodore Roosevelt* (CVN-71) during Operation Allied Force, and is shown together with additional PGMs deployed by the two Hornet units, including (from left to right): AGM-84E SLAM (electro-optically guided missile), AGM-88 HARM (anti-radar missile), and the AGM-154 JSOW (GPS-guided glide-bomb). (Artwork by Tom Cooper)



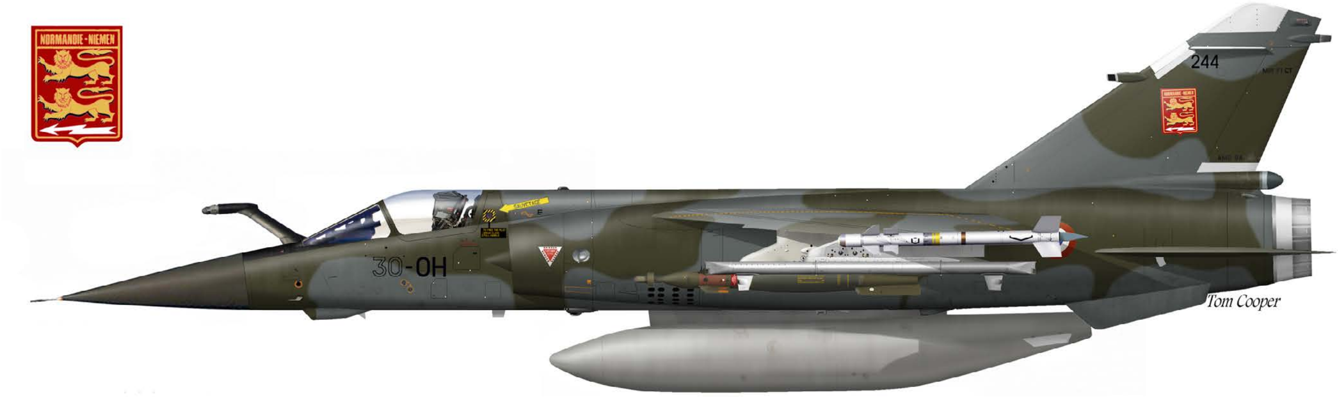
Being the only dedicated electronic warfare platform during Operation Allied Force not to be deployed to Aviano, but operating from an aircraft carrier underway on a station in the Ionian Sea, VAQ-141 was closer to the battlefield than any of the other Prowler-equipped units. Therefore, its EA-6Bs were frequently able to replace one of the usual two drop tanks (in addition to three ALQ-99 ECM-pods) with an AGM-88 HARM anti-radar missile (shown inset, lower right corner). This jet was AerNo. 161350, Modex AJ500 and is shown in typical insignia applied on all the jets of VAQ-141 for that cruise. As the aircraft nominally assigned to the squadron commander, it had the 'eyes' of the hawk applied in dark gray atop the fin in red; other jets had these in light ghost gray. (Artwork by Tom Cooper)



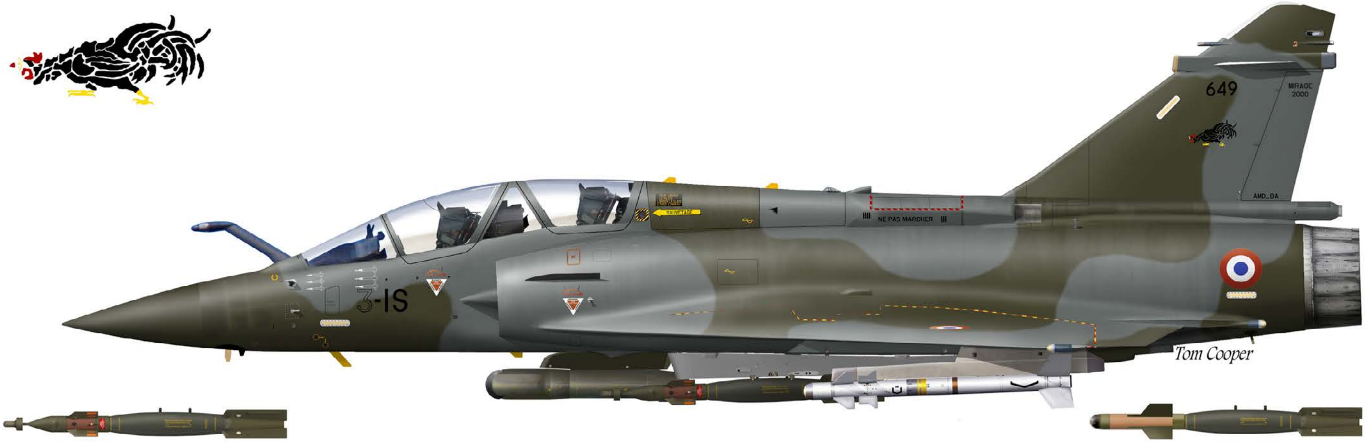
The second 'aircraft carrier' of the USN deployed during Operation Allied Force was USS *Kearsarge* (LHD-3). This amphibious assault ship embarked HMM-365 (reinforced), a heavy-lift helicopter squadron. As usual in the USMC, the HQ of this unit commanded the 22 Boeing-Vertol CH-46E Sea Knight, Sikorsky CH-53E Sea Stallion, Bell AH-1W Cobra, and Bell UH-1N Huey helicopters embarked, and also a detachment of eight McDonnell Douglas AV-8B Harrier IIs from the Marine Attack Squadron VMA-231. The jet illustrated here (AerNo. 165500 Modex YM/55) crashed on 1 May 1999, about 40 kilometres off Brindisi, in Italy, due to power loss. The pilot managed to eject safely. (Artwork by Goran Sudar)



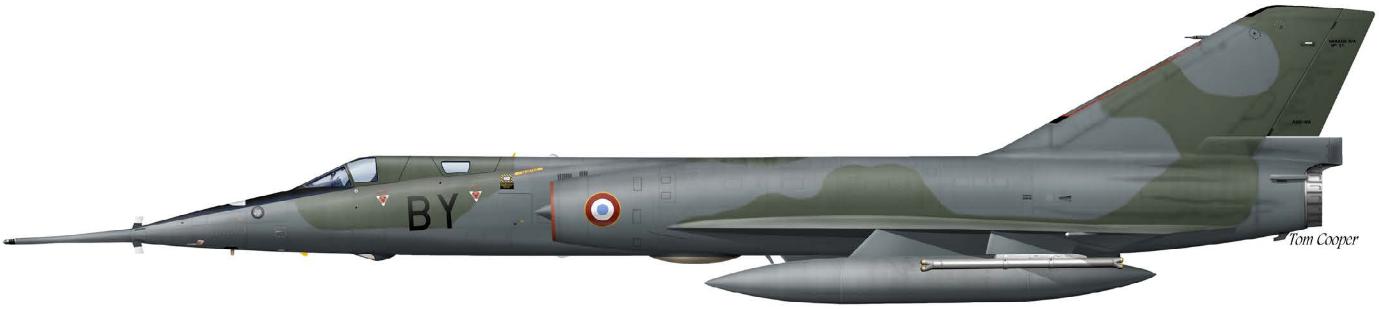
Including a total of 45 combat aircraft, the French air force's contingent was the second largest deployed in support of Operation Allied Force. Drawing lessons from earlier campaigns over the former Yugoslavia, by 1999 Paris invested heavily into re-equipping all of its combat aircraft with PGMs. Correspondingly, Jaguar As were equipped with PDLCT laser-markers and could deploy GBU-12s (shown inset, lower right corner) and French-designed BGL-400 laser-guided bombs. The main illustration shows serial A 122/7-IM, from the EC.3/7 Languedoc squadron, decorated with joker artwork and a total of 14 mission markings. The inset shows the front section of A131/7-IR, nicknamed 'Laser Belle'. (Artworks by Tom Cooper)



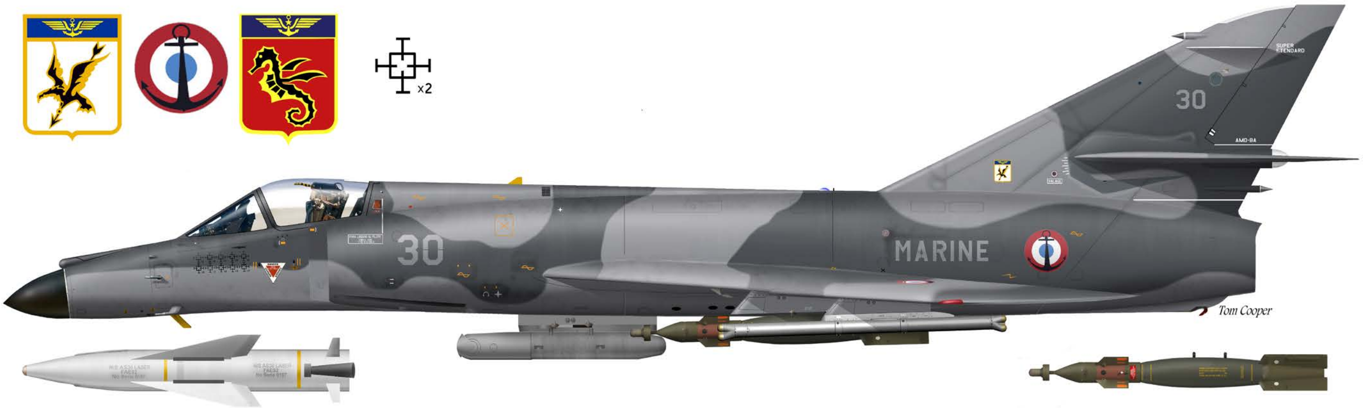
The Dassault Mirage F.1CT represented an upgrade of the older Mirage F.1C interceptor with modifications originally developed for Iraqi orders. These included the IFR-probe, the digital Sherloc RWR (identifiable by the 'square' housings on the front and the rear edge of the fin), the capability to carry 2,000-litre 'Irakien' drop tanks under the centreline, and chaff and flare dispensers that could be installed inboard of the main underwing hardpoints. Furthermore, they received a laser-tracker under the nose. A total of 10 Mirage F.1CTs of EC.30 were deployed during Operation Allied Force from Istrana AB in Italy. The example shown here is serial number 244/30-OH, and it is illustrated as armed with one Matra R.550 Magic air-to-air missile on the wingtip station, a Barax ECM-pod on the outboard underwing station, and a GBU-12 LGB on the main underwing pylon. (Artwork by Tom Cooper)



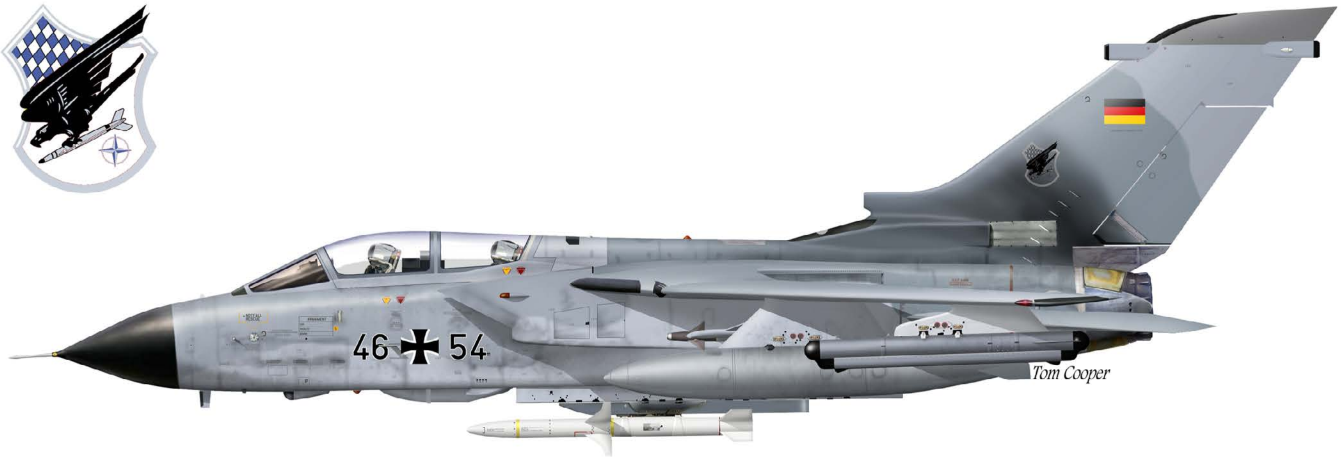
A total of 15 Mirage 2000Ds drawn from EC.3 were deployed to Istrana AB in Italy during Operation Allied Force. This example, serial 649/3-IS is shown in colours typical for 1999, consisting of Gris Bleu Tres Fonce (dark grey) and Gris Vert Fonce (dark green), applied to a standardised pattern in wraparound fashion. Notably, the radome was also painted in dark green – as on most of Mirage F.1CTs. By 1999, this variant was equipped with the Atlis II targeting pod, carried on its own pylon under the right intake, and usually deployed single GBU-12 or BGL-400s – or GBU-22s (lower right corner) – from the centreline pylon. Matra R.550 Magic Mk.II air-to-air missiles on outboard underwing pylons served for self-defence. The large drop tanks, carried on every mission, are not shown in this artwork in order to better show details of the weapon configuration. (Artwork by Tom Cooper)



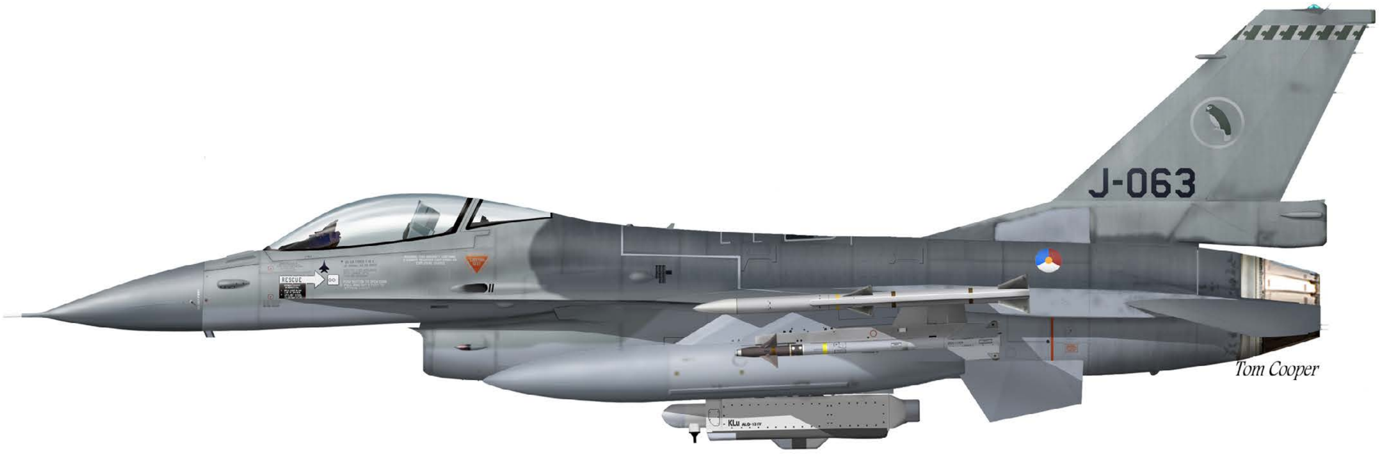
With digital technology still being in its infancy, classic photo-reconnaissance was still of crucial importance during Operation Allied Force. In addition to eight Mirage F.1CRs of ER.33, the primary French photo-reconnaissance platform of the time was the venerable Mirage IVP, three of which – all drawn from ERS.1/91 "Gascone" – are known to have flown at least three operational sorties over the FRY every day of the campaign from Solenzara AB in Corsica. All were painted in dark grey and dark green, applied to a standardised, wraparound camouflage pattern and seem to have had all of their unit insignia removed during the campaign. (Artwork by Tom Cooper)



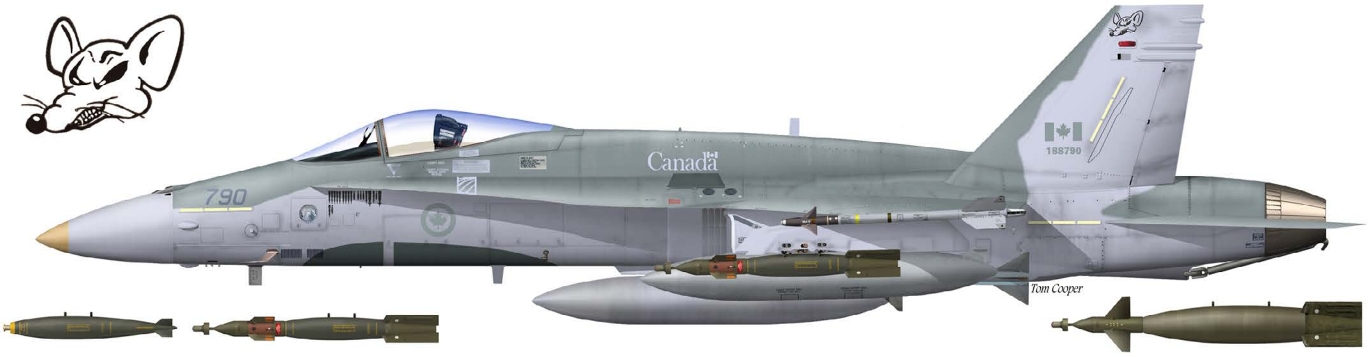
Aircraft embarked on the French aircraft carrier Foch (R 99) arrived in the Adriatic Sea on 28 January 1999 and remained on station until the 1 June, taking part in Operation Allied Force. The wing included 14 Super Etendard Modernise (SEM) of the Flottille 11F (and aircraft from 16F), four Etendard IVP reconnaissance fighters, Alizé anti-submarine aircraft and three SA.321 Super Frelon helicopters. Illustrated is SEM No. 30 in the markings of the 16F, armed with a GBU-12 LGB on the inboard pylon, a Barracuda ECM-pod on the outboard underwing pylon, and the PDLCT laser-marker pod under the fuselage. Insets above the aircraft show the insignia of the 11F, the French naval aviation, the 16F, and the way mission markings were applied, and beneath the aircraft an AS.30L and the GBU-12 LGB. (Artwork by Tom Cooper)



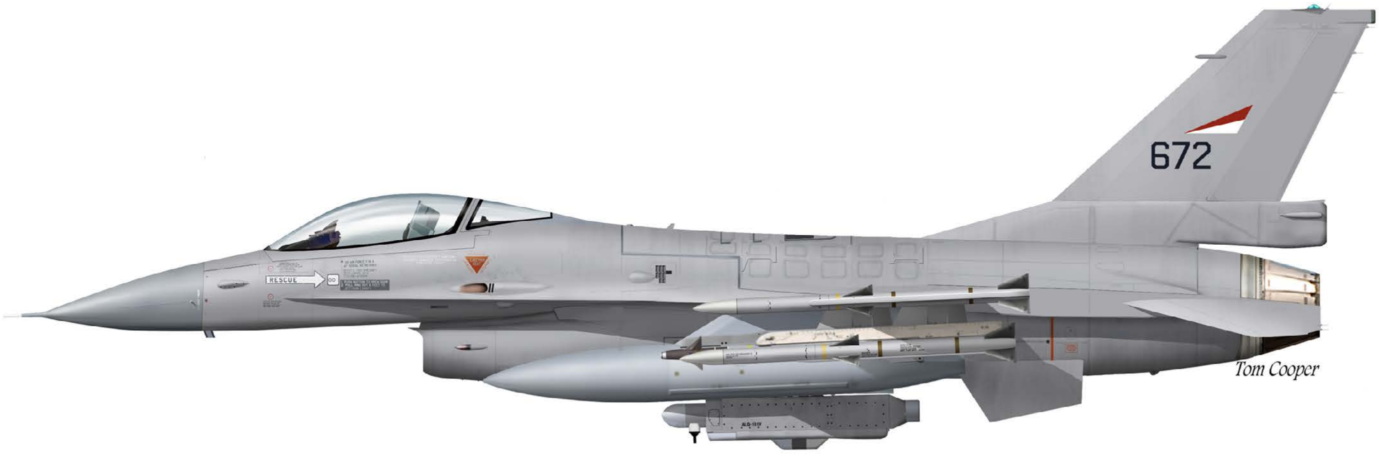
While flying over 100 combat sorties during Operation Deliberate Force in 1995, Tornado ECRs of Einsatzgeschwader 1 of the German Luftwaffe never fired a single short in anger. In February 1999, eight jets from Jagdbombergeschwader 32 were deployed to Piacenza AB in Italy again (together with eight Tornado IDS from Aufklärungsgeschwader 51), and they saw very intensive involvement in Operation Allied Force. They were usually operated in strike packages consisting of the Canadian, Dutch, French and other NATO air forces. The Tornado ECR 46+54 is shown in the markings of Jagdbombergeschwader JBG32 (crest shown inset) and armed with AGM-88 HARM missiles under the fuselage, AIM-9M Sidewinder air-to-air missiles for self-defence purposes inside of the main underwing hardpoint, and the Cerberus ECM-pod on the outboard underwing pylon. (Artwork by Tom Cooper)



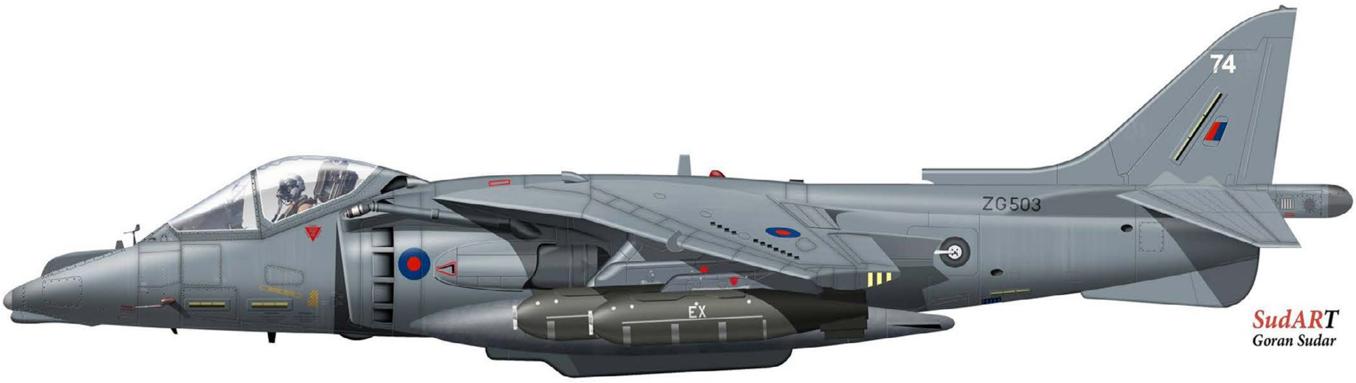
During the first night of Operation Allied Force, on 24 March 1999, this F-16AM of the 322nd Squadron Royal Netherlands Air Force – serial J-063 – was piloted by Major Peter 'Wobble' Tankik on a combat air patrol over northern Serbia. Once on station, Tankik engaged the MiG-29 flown by Major Nebojsa Nikolic with a single AIM-120 AMRAAM missile from long-range and scored an aerial victory. To commemorate the latter, the jet was decorated with a small black MiG-29 silhouette applied below the cockpit. The Dutch and Belgian contingents were pooled together into a detachment known by the abbreviation "B-D DATF" and operated their F-16s from Amendola Air Base in Italy. Installation of the ALQ-131 ECM-pod under the centreline was obligatory for all operations inside Yugoslav airspace. (Artwork by Tom Cooper)



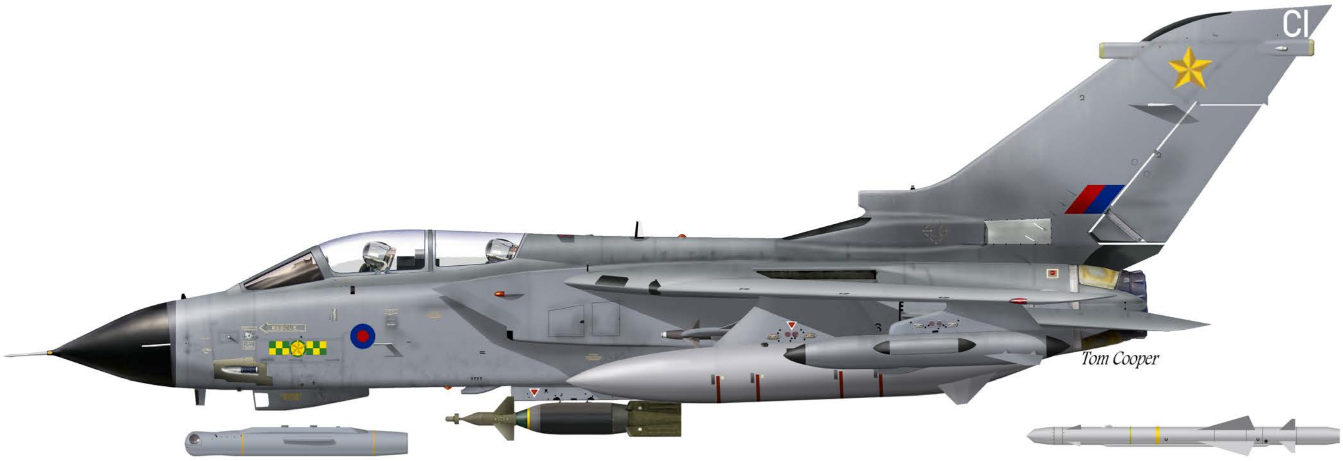
The Royal Canadian Air Force deployed its CF-188A Hornets (commonly 'CF-18') to Aviano during the October 1998 crisis, as part of Operation Echo. During Operation Allied Force, the detachment was strengthened to 18 aircraft and operated as the Canadian Task Force Aviano – nicknamed the 'Balkan Rats', the insignia of which was applied near the top of the fin of all aircraft. The Canadians carried out a total of 679 missions, including 588 air strikes, primarily using GBU-12 LGBs. The much heavier GBU-10 was added – following a hurried testing and service introduction in Canada – later during the campaign. This illustration shows CF-18 serial 188790/790, usually assigned to 3rd Wing at Bagotville Air Base, comprising Nos. 425 and 433 Tactical Fighter Squadrons. (Artwork by Tom Cooper)



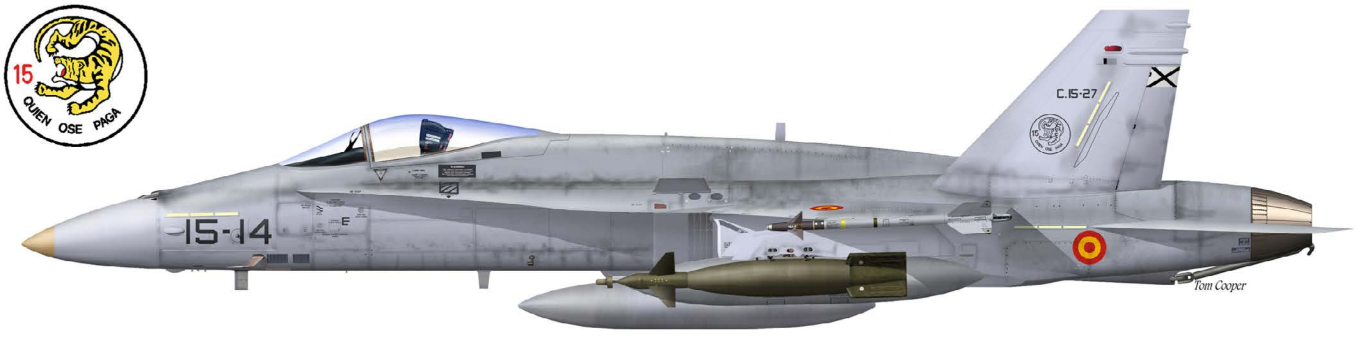
Based at Grazzanise AB, in Italy, the Norwegian and Danish contingents operated together during Operation Allied Force. This Norwegian F-16AM, serialled 672 (derived from its original USAF serial 80-3672), is shown in the relatively unusual fighter-interceptor configuration, including not only four AIM-120 AMRAAMs, but also a pair of AIM-9 Sidewinders. Shown installed under the centreline is an ALQ-131 ECM-pod. (Artwork by Tom Cooper)



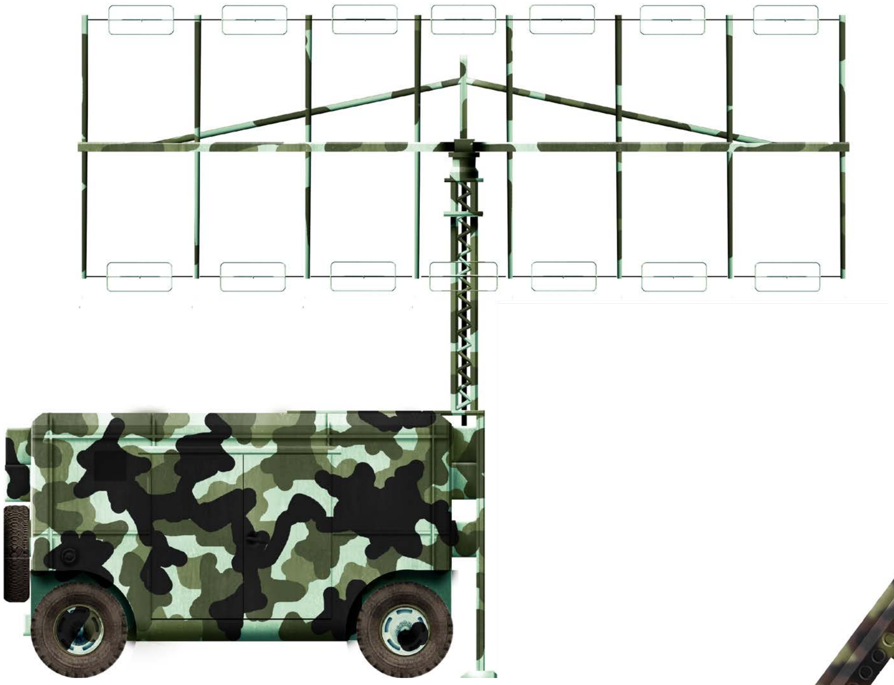
The RAF deployed a total of 16 British Aerospace Harrier GR. Mk 7s from Nos. 1, 3 and 4 Squadrons based at RAF Cottesmore, Rutland in the UK and Laarbruch in Germany, for Operation Allied Force. They operated from Gioia del Cole AB in Italy – one of the closest NATO air bases to the combat zone. Mostly armed with Hunting BL755 CBUs, a pair of which is shown here, and also Paveway II LGBs, they usually flew air strikes on selected targets in Kosovo, distributed into so-called 'kill boxes'. Bad weather early during the campaign caused much frustration because the British were forced to abort numerous of their sorties, but later on they reportedly achieved a good success rate. (Artwork by Goran Sudar)



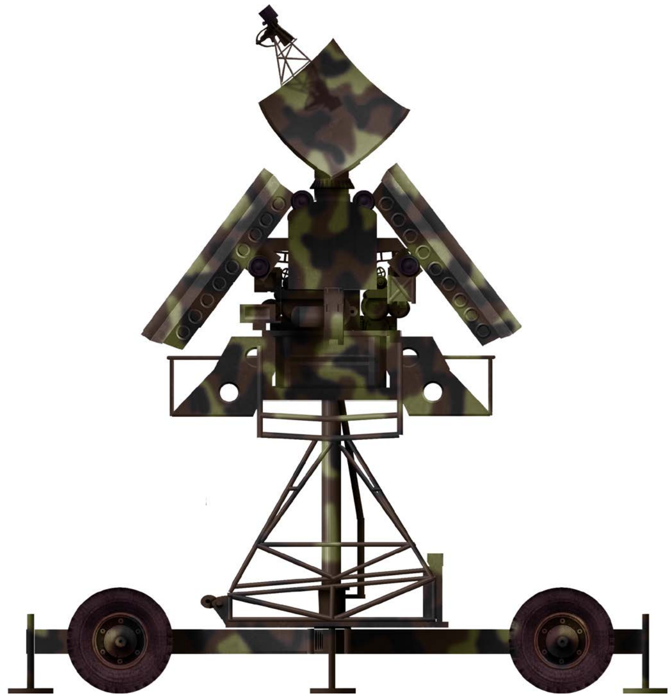
Based at RAF Brüggen in Germany, the contingent of Tornado GR.Mk 1/1A/1Bs drawn from Nos. 9, 14, and 31 Squadrons was troubled by bad weather and achieved relatively little against targets in Kosovo early during Operation Allied Force. This example – a GR.Mk 1B coded CI, from No. 31 Squadron – is shown in standard configuration, including a Paveway II LGB under the fuselage, a pair of drop tanks, AIM-9M Sidewinders for self-defence and a Sky Shadow ECM-pod. The TIALD laser-marker (left inset) was used for guiding laser-guided bombs, while ALARM anti-radar missiles (right inset) were deployed only later during the campaign. Things became better once six aircraft from Nos. 9 and 31 Squadron were redeployed to Solenzara AB on Corsica, between 29 and 31 March, but the missions from that base were carried out only between 2 and 9 June 1999. (Artwork by Tom Cooper)



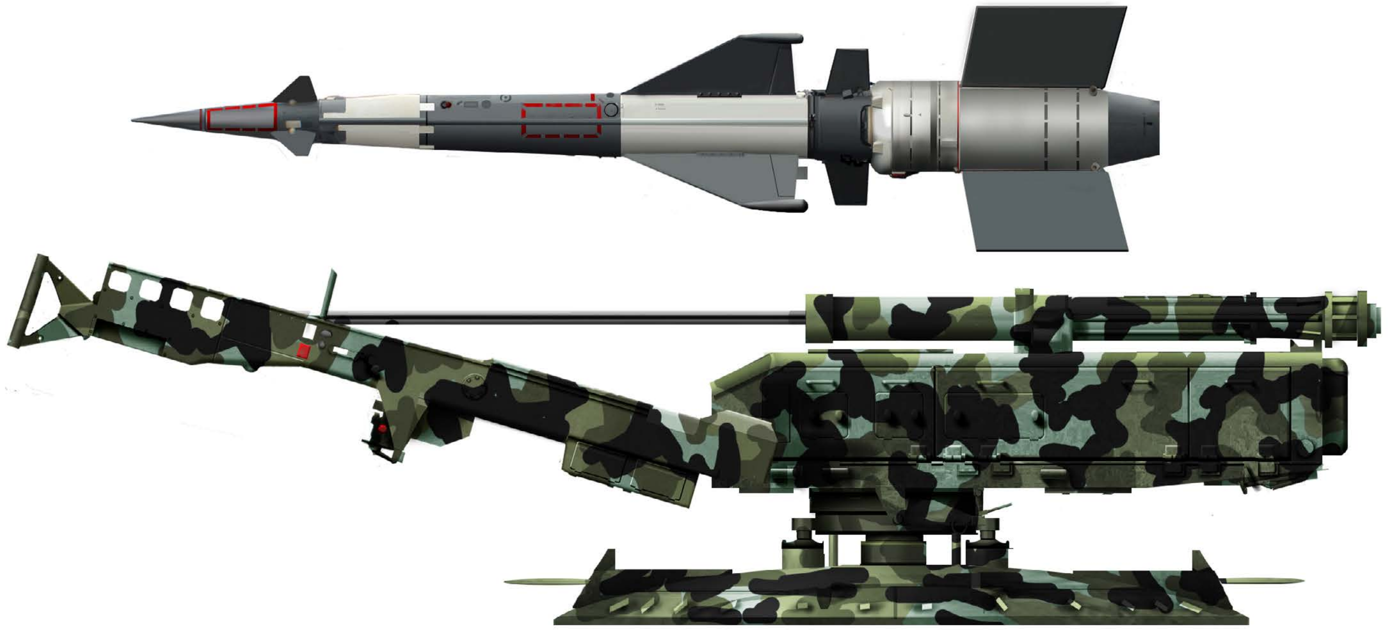
This McDonnell Douglas EF-18 Hornet of the Spanish Air Force – coded 15-14, and serialled C.15-27 – was one of six jets drawn from Ala 12 and Ala 15 and redeployed to Aviano AB for Operation Allied Force. Code-named ICARO, the Spanish detachment at Aviano was originally established in spring 1995. Wearing the standardised camouflage pattern in light compass ghost gray (FS36375) and dark compass ghost gray (FS3632), Spanish Hornets performed a wide variety of tasks, including combat air patrols, air-to-air and SEAD-operations. This example is shown carrying the GBU-10 Paveway II LGB on its outboard underwing pylon. Inset is the patch of the Ala-15 'Tigers'. (Artwork by Tom Cooper)



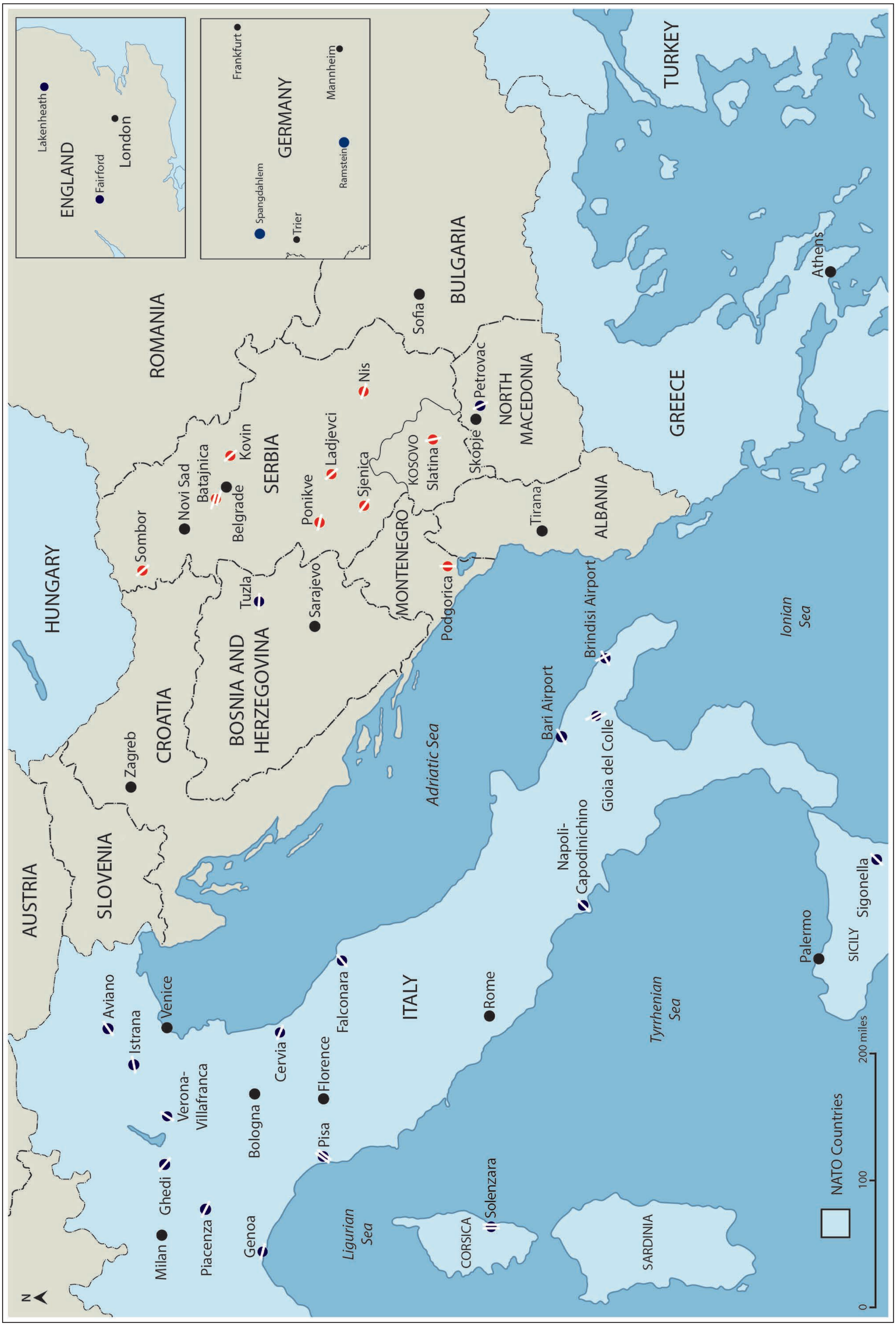
Soviet-produced P-12 (NATO Spoon Rest A) surveillance radar was used within the missile battalions of the RV i PVO, even though it was regarded as obsolete. It was used by the 126th Air Surveillance Brigade as the reserve or replacement radar. (Artwork by David Bocquelet)



SNR-125 (NATO-codename 'Low Blow') fire-control radar of the NEVA (SA-3 Goa). It was the heart of each Neva battalion and known as the "StVR" ("Stanica za vodjenje raketa" or Missile guiding station) in the RV i PVO parlance. (Artwork by David Bocquelet)



The S-125 Neva-M (SA-3 Goa) surface-to-air missile was the sole system of the 12 missile battalions belonging to the 250th Missile Brigade and 450th Missile Regiment of the Serbian air defence. The upper artwork shows the standard V-601 (5V27U/D) missile, while the lower artwork depicts the 5P73 launching ramp. (Artwork by David Bocquelet)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Fairford
London
GERMANY
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Mannheim
Spangdahlem
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BULGARIA
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TURKEY
HUNGARY
AUSTRIA
SLOVENIA
CROATIA
Zagreb
BOSNIA AND HERZEGOVINA
Tuzla
Sarajevo
SERBIA
Sombor
Novi Sad
Batajnica
Belgrade
Kovin
Ponikve
Ladjevci
Sjenica
Nis
KOSOVO
Slatina
MONTENEGRO
Podgorica
NORTH MACEDONIA
Skopje
Petrovac
ALBANIA
Tirana
GREECE
Athens
Ionian Sea
Adriatic Sea
Brindisi Airport
Bari Airport
Gioia del Colle
Napoli-Capodinichino
ITALY
Aviano
Istrana
Venice
Verona-Villafranca
Ghedi
Milan
Piacenza
Bologna
Cervia
Florence
Falconara
Pisa
Genoa
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Map of southern Central Europe, showing the air bases and airports relevant to Operation Allied Force. (Map by George Anderson)

First Dilemmas Over the Continuation of the Air Campaign

As Air Chief Marshal Sir John Day, Deputy Chief of the UK Defence Staff, later commented "The Kosovo air campaign was designed as a graduated campaign, to give Milosevic [*sic*] the chance to change his mind about his ethnic repression of the Kosovo Albanians once he realised that NATO was serious."[32]

The expected surrender of President Milošević did not occur after the first few days of heavy air strikes, while the loss of the USAF stealth fighter caused a lot of media criticism on the course of Operation Allied Force. All this produced first dilemmas among the highest circles in NATO and the US military on the further use of air power in solving the crisis. Since the initial air strikes had not produced a political solution, the targets had to be widened to include other military and civil objects in Serbia. Targets in Kosovo, which were more or less of tactical importance, continued to be attacked on daily a basis.

General Clark indirectly praised the Serbian/RV i PVO air defence while commenting on the effectiveness of both sides during Allied Force, but he was obviously tremendously disappointed. The Serbs had preserved their air defence, command and communication

A marshaller with the 627th Air Mobility Support Squadron, RAF Mildenhall, directs a C-5B Galaxy to a parking position. The C-5B is delivering four fuel trucks to help the fuel management flight of the 100th Supply Squadron. (National Archives Catalogue)

An RAF crew checks their Lockheed Tristar tanker at Ancona Air Base during Operation Allied Force. (Brit. MoD)

PENNSYLVANIA
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U.S. AIR FORCE
A KC-135 Stratotanker from the 171st Air Refuelling Wing of the Pennsylvania Air National Guard heads a line-up of tankers on the ramp at RAF Lakenheath in the UK on 28 March 1999. (NAC)

An F-14 Tomcat engages its afterburners prior to a night launch off the flight deck of the US aircraft carrier USS *Theodore Roosevelt* during Operation Allied Force. (NAC)

Crew members prepare to launch an E-2C Hawkeye attached to the VAW-124 'Bear Aces' on USS *Theodore Roosevelt* during Allied Force. (NAC)

Flight deck handlers move an F-14 Tomcat belonging to the VF-41 'Black Aces' into place in preparation for launch from the '*Theo*'. (NAC)

system, firepower and other defence capacities. Meanwhile, there was no way to accurately evaluate the effect of the air campaign and the use of air power against certain important targets. Being a US Army officer, Clark probably expected that by introducing Apache helicopters and MLRS (Multiple Launch Rocket Systems) it would bring about a turn in fortunes in the campaign and lead to the defeat of the Serbs. USAF commanders such as General Jumper were also frustrated at this stage of the operation. As Clark explained, the operation was being waged in an attempt to force the enemy to obey political requests, and not to secure their complete military defeat.[33]

Already at this stage of the operation, some Western political circles were asking for a pause in its tempo to enable the diplomats to re-establish a negotiation process. Meanwhile, others were calling for a further intensifying of air strikes and an expansion to targets linked with repression in Kosovo. Such targets (government institutions, highest military and police HQs, ministries and Socialist Party premises) were actually in central Belgrade. Their targeting would raise the question of collateral damage among Serbian civilians, and elements of the media were always eager to attack the purpose and outcome of such attacks.

It was obvious that NATO's process of target approval was confusing. It was assumed that the SACEUR, General Clark, had the authority to order strikes on all types and categories of targets which had earlier been approved by NATO. But the US State Department requested approval target by target. Soon, the European allies also wished to be involved in the choice of targets. For example, the UK government asked that targets which were attacked by aircraft which took off from its soil should be approved by representatives of its legal system, while French politicians also started to ask for in-depth involvement in planning and target approval as a way of keeping France interested in the region.[34]

The early days of the operation showed that for most of the static targets, one bomb was not sufficient for their destruction, especially regarding large military barracks or compounds, storages and air bases. As was soon discovered, most of the static targets had been emptied prior to the attacks. Such circumstances complicated further air strikes, since the Serb units, equipment and other materiel were now dispersed and in most cases hidden among civil assets. It was soon obvious that a phased approach in organising the air campaign and choosing targets was not realistic. Bad weather over most of the theatre additionally frustrated the military leadership of Operation Allied Force, especially the European allies. As the writer Tim Ripley pointed out while explaining the RAF's operations in the early days of Allied Force: "Bad weather frustrated almost a quarter of all planned strikes as the conflict dragged [on] for 78 days."[35]

Crew members work together to push an F/A-18C back into its proper position on the flight deck of USS *Theodore Roosevelt* during Operation Allied Force. (NAC)

Additional NATO Reinforcements Arrive During April

It had become apparent that the NATO air contingents that were deployed in Italy were not sufficient for the continuous schedule of the operation, which started to become unpredictable and lasted much longer than was expected. The loss of the Yugoslav MiGs and USAF F-117A only confirmed that conflict led to further radicalisation. These circumstances led to requests that the deployed air contingents in the theatre be strengthened. USS *Theodore Roosevelt*, which had been heading to the Persian Gulf, was ordered to return to the Adriatic and to join the operation with its carrier air wing.

On 1 April, the Pentagon announced the deployment of a further 13 F-117A stealth fighters belonging to the 9th FS/49th FW at Holloman AFB. They reached Spangdahlem on 3 and 4 April, and only 33 hours after taking off from Holloman took part in air operations over Serbia. All personnel names and distinctive serials were removed, while the German Police improved air base security to stop the spotters that photographed and noted all the missions. On 2 April, a group of RCAF CF-18 Hornets from Bagtoville arrived, followed by two transport aircraft (CC-130 and CC-150). Four days later, on 6 April, the 22nd EFS/52nd FW started SEAD missions from its home base at Spangdahlem. These were the first USAF air strikes launched from German soil since the Second World War and were the longest missions that single-engine types carried out during the operation.[36]

These early days of the air campaign were characterised by bad weather over the Balkans. Most of the RAF Harriers returned from their missions having been unable to carry out their attacks over Kosovo. Such weather conditions continued to the end of March and the first days of April.[37]

The US Defense Secretary announced that the USAF would deploy five B-1B Lancers to operate in all weather conditions. These 'Bones' bombers belonged to the 77th BS/28th BW based at Ellsworth AFB in South Dakota and arrived at Fairford in the UK on 1 April. On the following night, two of the B-1s took part in their first missions.[38] More assets arrived at Fairford: B-52s from Barksdale and Minot AFBs (2nd and 5th BW) and KC-135 tankers from Mountain Home (22nd ARS/366th FW). A new expeditionary

An 81st Fighter Squadron reloader of the GAU-8 30mm cannon of an A-10 Thunderbolt at Aviano on 10 April 1999. The A-10 is being loaded with armour-piercing ammunition. (NAC)

A F-16A Falcon from the Royal Netherlands Air Force breaks away from a 100th Air Expeditionary Wing KC-135R Stratotanker after refuelling. (NAC)

unit, the 2nd Air Expeditionary Group, was established at Fairford to control all the assets at the base:[39]

- 20th EBS controlled all deployed B-52Hs, a total of 25 airframes from Nos 11, 20 and 96 BS from the 2nd BW, Barksdale AFB and 23BS from the 5th BW, Minot AFB;
- 77th EBS, with usually around five operational B-1s, among a total of nine belonging to Nos 37 and 77 BS from the 28th BW;
- 22nd EARS, which operated five KC-135R tankers out of the larger fleet of tankers that rotated from different units. This tanker squadron operated in support of all the engaged aviation, not just bombers from Fairford.[40]

More tankers from Nebraska, Tennessee, Mississippi, Illinois and New Jersey ANGs were involved in the operation on a rotational basis from 7 April.

Spokesman Kenneth Bacon explained at one of the Pentagon press conferences held in this period: "The addition of these aircraft will of course allow us to do two things. Expand the number of strikes over any 24-hour day period and two, give us more deep strike capacity as necessary. So, basically it will allow us to increase the intensity of the air campaign over Kosovo and Yugoslavia."[41]

Finally, on 6 April, USS *Theodore Roosevelt* (CVN-71), a veteran from the earlier Bosnian air war, arrived in the Adriatic. The 8th Carrier Air Wing was boarded on its deck, with the usual strength of two F-14 (VF-14 and 41) and two F/A-18 (VFA-15 and 87) squadrons, plus single squadrons of EA-6B (VAQ-141), E-2C (VAW-124), S-3B (VS-24) and SH-60 and HH-60 (HS-3) helicopters. In all, it held 71 aircraft. The first missions were carried out from the '*Theo*' on the same night that it reached the Adriatic.[42]

On 11 April, another aircraft carrier arrived in the theatre, the Royal Navy's HMS *Invincible* with 17 aircraft on board. Three days later, taking off from the amphibious assault ship USS *Nassau* (LHA-4), the US Marines' HMM-266 Squadron equipped with AV-8 Harriers carried out its first mission as part of the operation.

Since Aviano Air Base had become overcrowded, it was decided that the 81st EFS with its A-10s should be moved to southern Italy to the base at Gioia del Colle, which was home to an RAF contingent of Harrier GR.7s. In the first days of Operation Allied Force, this squadron operated in various missions – including A-FAC (Airborne Forward Air Controller) and CSAR – keeping a pair of A-10s on constant alert. This squadron was soon reinforced with a detachment of A-10s from the 23rd FG at Pope AFB. The movement of the A-10s was very effective in future engagements. On 11 April, some of the A-10s took off from Aviano, completed their missions and continued to land at Gioia. The typical mission to Kosovo was thereby shortened by a precious 50 minutes. In Gioia, a new expeditionary unit was formed, the 40th Expeditionary Operations Group, which consisted of Nos 74 and 81 EFS and the 40th Expeditionary Logistics Squadron. They operated a group of 18 A-10s, with five from Pope. The 40th EOG also received some pilots and ground crews from Pope and Moody AFB.[43] In a television news report, a lieutenant colonel, commander of the 81st Fighter Squadron, named only as 'Kimos', explained the move to Gioia:

> We are leaving here today for two major reasons. First of all, so that we can be closer to the fight. The A10s have been quite successful in finding, fixing and destroying field forces that the Serbs have in Kosovo. By getting us closer, we can spend more time over targets and less time going to and from the target area. And secondly there are probably more forces on the way and making more room here is quite useful for the entire war effort.[44]

After losing its A-10 fleet, Aviano received the 78th EFS from 20th FW, Shaw AFB, on 13/14 April. This unit was equipped with 24 F-16CJs, known as HARM-shooters. Forty hours after arriving, this SEAD-tasked unit – supported by personnel from other 20th FW units – took part in operations against Serb air defence positions. More than 100 tents were erected at Aviano to accommodate the Shaw airmen.[45]

Head-on view of a French Air Force Mirage 2000C as it approaches a USAF KC-135R Stratotanker for refuelling during Operation Allied Force. (National Archives Catalogue)

RAF armourers load BL755s on their GR.7 Harriers at Gioia del Colle. (Brit MoD)

The Italian AMI engaged its Tornado IDS-HARM aircraft of 155 Gruppo from the first night of Operation Allied Force. Two aircraft were involved, armed with AGM-88s. From that night onwards, the aircraft of 155 Gruppo – together with German Tornado ECRs of the Luftwaffe detached to the same base at Piacenza – continued to operate daily against the Yugoslav/Serb air defence assets.[46] After the Italian government approved the AMI's combat engagement, further Italian Tornados took part in the operation, with the Tornado IDS-equipped 102 Gruppo at Ghedi starting missions from 13 April.

Moved from Spangdahlem Air Base in Germany to Aviano, F-16CJs of the 23rd EFS operated against Serb air defence during almost the whole of Operation Allied Force. Such was the case with this Block 50, serialled 91-0415, seen taking off on 31 March 1999. The 23rd EFS flew over 1,000 sorties during the operation and fired a total of 191 HARM missiles to destroy Serbian radar sites. (NAC)

A good example of how the RV i PVO operated during Allied Force: crews of the 126th Air Surveillance Brigade move a Marconi S-600 radar at an unprepared radar position. (Medija centar Odbrana)

A radar unit crew hides its S-600 radar with timber at an improvised radar position at Bukovik. (Rajica Bošković)

On that day, four aircraft of the 6 Stormo took off for their first combat mission over Kosovo. Until then, the Italians had kept their detachments on alert on the ground, but without any involvement in strike missions. They were joined by 154 Gruppo (from 6 Stormo) a couple of days later. It was soon discovered that the combat missions became a huge burden for the AMI, with their resources overstretched. The Italians engaged more Tornados and pilots from different units to overcome this problem from 30 April. The 102 Gruppo pooled Tornados and pilots from three different units. To start with they could offer the CAOC up to six sorties per day. After creating a Tornado 'pool', they managed to increase this to eight missions per day during May. Another problem was rules of engagement under which strike missions should be carried out from above 15,000ft. Previously, Italian Tornado pilots used to launch strike missions with standard Mk-82 500lb or GBU-16 1,000lb bombs from low level, coupled with the Combined Laser Designated Pod. It was estimated that the results of their strike missions were unsatisfactory. The AMI then ordered its recent type, the Alenia-Aermacchi-Embraer AMX, to conduct Allied Force missions: four for strike missions and two for reconnaissance. Their crews were tasked to carry out four missions per day, operating only over Kosovo. Italian AMXs started to carry out these missions on 14 April, but soon started to pool together the aircraft at Amendola from four different groups (Nos: 13, 14, 103 and 132). Two reconnaissance AMXs with Orpheus pods continued to fly over Kosovo from Istrana. The Italians used Mk-82 bombs (four per aircraft), and later the same type with added Opher-imaging infrared terminal guidance kits (only two per aircraft). At the very end of the operation, the Italian AMI could manage to contribute a daily package of 10 strike AMXs plus an additional two in the reconnaissance version. Lieutenant Colonel Cicconardi of the AMI explained: "We only flew daylight missions as the cockpit lights are not NVG compatible."[47]

By mid-April, the 60th Air Expeditionary Wing was activated at the Rhein-Main Air Base. The wing, based on the 60th Air Mobility Wing from Travis AFB, operated two air refuelling squadrons, each with KC-10 Extender and KC-135 tankers, assembled from different USAF, AFRES (Air Force Reserve) and ANG units on temporary duty. A third squadron in the 60th AEW operated J-8 Joint Stars, which arrived from the 93rd ACW at Robbins AFB, Georgia. This valuable asset for monitoring movements of the Serbian/VJ forces would log a total of 85 missions during Allied Force.

On 21 and 22 April, the Netherlands and Belgium both allocated four more F-16As to Italian air bases, while Denmark sent three more of the same airframes.

General Clark later commented that in late April, he and his HQ asked not just for more target approval but for more aircraft of all kinds to be deployed to the theatre. The number of available aircraft simply did not match the needs of the ongoing operation, which slowly turned from a limited air operation into a full-scale attack on Serbia.[48] More air assets were deployed before the end of the month. A thousand reserve AFRES personnel was mobilised on 27 April to man 15 more KC-135 and KC-10 tankers, which were ordered to Europe to join Operation Allied Force. They would be deployed in Britain (RAF Brize Norton in Oxfordshire), Germany (Rhein-Main) and Hungary (Budapest). Ten more B-52H bombers were also ordered to join the operation: eight from the 2nd BW, Barksdale

AFB and two from the 5th BW, Minot AFB. Among these, five were capable of launching a new type of medium-range conventional stand-off missile: the AGM-142 Have Nap.[49] Added to this newly mobilised group and sent to Europe were two more E-3 AWACS from the 552nd ACW at Tinker AFB and a single EC-130 from the 355th FW at Davis Monthan AFB. This deployment soon became the largest USAF activity in Britain since the Berlin Crisis of 1961.[50]

A typical improvised firing position of a single missile battalion of the 250th Air Defence Brigade at Draževac, during Operation Allied Force, depicting the conditions that Serb personnel operated in during the defence of Belgrade. (250. rbr PVO)

A missile crew of the 240th Self-Propelled Missile Regiment load Kub (SA-6) missiles from a transport vehicle onto a tracked GM-578 launch vehicle, somewhere on the Vojvodina plain. (B. Dimitrijević)

SEAD Offensive Against the Air Defence System

As was the case with NATO planners and senior leadership, the RV i PVO HQ witnessed that their concepts of defence in two separate operations had to be abandoned. Contrary to their initial belief, NATO air strikes were conducted over the whole territory of Yugoslavia. The duration of the campaign showed that certain areas needed their air defence assets strengthened by removing others from parts of their territory of lesser importance or receiving fewer air strikes. Most of the air defences consequently started to be regrouped and sent to the two areas in most need, namely Kosovo and the capital city of Belgrade.

Meanwhile, since the loss of the Lockheed F-117A stealth fighter, NATO and the USAF started to pay more attention to the Serbian air defence than at the beginning of the campaign. From 31 March onward, specially organised and dedicated SEAD groups, belonging to both the F-16CJ squadrons from the 52nd Fighter Wing, were active. They began to operate with the sole task of neutralising or destroying deployed Serb SAM battalions and batteries. Most of these attacks were carried out by using AGM-88 HARM missiles.[51] Their high speed in targeting and hitting the sources of radiation proved efficient in combating the Serb air defence assets.

The period between 31 March and 9 April can be regarded as a SEAD offensive against Serbian air defences. The SEAD attacks caused the first serious casualties to the RV i PVO air defence assets, with several SAM/Air Surveillance units neutralised, with a dozen personnel killed and many more wounded. Some of the most serious attacks are listed below.

On the afternoon of 31 March:

- At Ćamurlija near Niš, a surveillance radar of the 230th Missile Regiment was destroyed, with one conscript killed.
- At Ljug Bunar on the outskirts of Djakovica, a P-15 surveillance radar of the 52nd Artillery Missile Air Defence Brigade was destroyed. This unit belonged to the ground forces of the Third Army but was detached to the RV i PVO's 311th Missile Regiment (Kub). One NCO and two conscripts were killed.

Ground crew from the air base at Batajnica load R-13M AAM on an improvised rocket launcher on a Praga V3S vehicle, from which the twin 30mm AA gun has been removed. (Mix)

Soon, use of P-15 radars would bring further casualties since the way it worked, and its frequencies, made it the almost ideal target for HARM missiles.

On 4 April:

- At Grebničko Polje near Klina, the 2nd Battery of the 230th Regiment was attacked with cluster bombs. One officer and one solider were killed, five more personnel were seriously wounded and the battery was almost completely destroyed.
- At Peć, another battery of the 230th Missile Regiment was attacked. One conscript was killed.
- At Štavlje, near Kragujevac, an AGM-88 HARM hit one battery of the 310th Missile Regiment. One NCO was killed.
- At Jankov Kamen, the 3rd Radar Company of the 20th Air Surveillance Battalion was hit. The commander of the company was wounded and an AN/TPS-70 cab destroyed, while other parts of the radar were damaged.
- At Ljubić near Čačak, a battalion of the 450th Missile Regiment was attacked and damaged. There were no casualties.

On 5 April:

- At Vukićevica, at 0221 hours, two AGM-88 HARM missiles neutralised the 8th Battalion of the 250th Brigade. One officer was killed and four officers and NCOs badly wounded.
- In central Zemun, a building of the RV i PVO HQ was heavily damaged and thereafter remained unserviceable.[52]

On 6 April:

- At Mount Maljen, at 2305 hours, an AN/TPS-63 radar of the 1st Independent Platoon of the 31st Air Surveillance Battalion was destroyed. Two 2nd lieutenants who had just arrived from the Military Academy were in the radar cabin when the strike hit, and both were killed. The radar had previously been moved from a position in Kosovo.

On 8 April:

- At Beranovac and Samaila near Kraljevo, two battalions of the 450th Missile Regiment were neutralised. There were no casualties.

On 9 April:

- At Šabac, a battery of the 310th Missile Regiment was attacked with HARM missiles. A conscript was killed at one of the damaged radars.[53]

It can be seen from this list that NATO SEAD attacks targeted the RV i PVO's air defence units all over Yugoslav territory in an attempt to downscale and destroy its activities, which had caused a serious threat to the strike packages operating inside Yugoslav air space. "The struggle with SEAD groups was our most difficult task," claimed Colonel Stanković, deputy commander of the 250th Missile Brigade. It was very difficult for the defenders to react to the SEAD groups and at the same time to open fire upon the strike packages which attacked other targets. Moreover, SEAD groups orbited in certain areas and immediately attacked RV i PVO missile-firing positions if any radiation or other activities were spotted.[54]

On the night of 14-15 April, another battle was held between Serbian air defences and a USAF strike package. Stealth B-2As were also engaged, while SEAD groups were engaged to cover the attack. At 0030 hours, the 1st Missile Battalion at Stari Banovci was attacked with precision guided missiles. The battalion was neutralised but suffered no casualties. Forty minutes later, the 4th Missile Battalion, based at Dolovo north-east of Belgrade in Banat, was attacked. At 0010 hours, the 'Silo' battery launched MANPADS missiles but missed their targets. At 0012 hours, the 4th Battalion discovered a target at a distance of 14km and altitude of 4,000 metres. General Stanko 'Šilja' (Goofy) Vasiljević, at the time a major in the 4th Battalion, recalled that two Neva missiles were fired at the target, but despite the correct guidance failed to register a hit. The battalion then did something that was not typical in this war: a minute later, it launched two more missiles. This was a procedure known as 'transfer of fire' and had been practiced during their regular peacetime training. It was bold but dangerous attempt. At 0013 hours, the two further Nevas were launched against the target at a distance of 8km and still an altitude of 4,000 metres. The missiles were tracked until 2,000 metres from the target, when an explosion halted any further tracking. The battalion command cabin had been hit by an AGM-88 HARM launched by a nearby SEAD group. Three members of the crew were seriously wounded, including our eyewitness, Vasiljević. It was a high price to pay for an attempt to hit a target with 'transfer of fire'.[55]

A crucial role in this USAF strike package that clashed with Serbian air defences at Dolovo was played by Captain Cary Culberston, as it was he who knocked out the 4th Missile Battalion position. He was later awarded the Silver Star for his actions during Operation Allied Force. His citation quotes that Culberston:

A Yugoslav MiG-29, seen here in QRA at Batajnica Air Base during the early days of Operation Allied Force. The pilot sits in the cockpit of the prepared aircraft, ready to take off upon receiving the signal from the OC. (204. lap)

> was awarded the Silver Star for conspicuous gallantry and intrepidity in connection with military operations against an opposing armed force while serving as Pilot of an F-16 Fighter Plane in action, near Belgrade, Yugoslavia, on 14 April 1999. On that date, Captain Culbertson was leading a flight of F-16CJs that was providing suppression of enemy air defenses for B-2 bombers on a strike mission near Belgrade when Serbian forces fired three SA-3s at the fighter planes. Captain Culbertson turned his F-16 toward the rising missiles and attacked the SA-3 site with a high-speed anti-radiation missile. The enemy then launched two more SA-3s, this time directly targeting Captain Culbertson's aircraft. Although he would have been justified to discontinue his attack and defend against the incoming missiles, Captain Culbertson, with total disregard for his own personal safety and with the lives of his flight members foremost in his mind, continued his attack. Firing a HARM missile, he destroyed the enemy radar dish, and then evaded the SA-3s.[56]

After suffering their first casualties, RV i PVO air defence units started to develop their survival skills. These included various procedures:

- positioning the surveillance radar at a distance of up to 30km from the SAM firing unit;
- seeking of targets by SAM units operating targeting radars (so-called 'radiation') for no longer than 5 or 6 seconds to avoid being hit by anti-radar missiles;
- a missile unit would not engage in combat if it was not camouflaged correctly;
- manoeuvring and changing of the firing positions had to be constant, especially if the firing position had been used before and noticed by NATO surveillance;
- each air defence unit had to establish an evacuation team for instant movement if necessary.[57]

There were also practices of 'false launching' and improvised 'Imitators of Radar Radiation' (known as IRZ) introduced to confuse the SEAD groups. But after some initial success, these methods proved of limited use in combat. It was shown that constant movement, limited radiation and different improvisations with constant adaptation to SEAD groups' practice were the only possible ways for Serbian air defence units to survive.[58]

'Knights' Take Off Again

Ten days after their encounter with USAF F-15s in which two were lost, Serbian MiG-29s were airborne again. At 0347 hours on 6 April, Major Emeti took off from Batajnica in the MiG-29 serialled 18109 to intercept several targets visible on the radar screen at the Operations Centre. However, it turned out to be false alarm, and 17 minutes later Emeti returned to base. During the same day there were several alarms for the MiG-29 pilots, which were kept in the highest state of readiness, but there were no further take-offs from Batajnica. At Ponikve, however, Major Zoraja took off in his MiG-29 (serial 18101) at around 2310 hours and tried to 'lock' several targets at distances of over 30km. Zoraja was unable to successfully 'lock' any of the NATO aircraft or launch any of his AA missiles, so at 2351 hours he landed at Ladjevci Air Base.

On the following nights, 7 and 8 April, the 'Knights' kept single MiG-29s in the highest state of readiness at Batajnica and Belgrade International Airport, but without taking off. At Ladjevci, on 8 April, Captain 1st Class Milenković took off at 0955 hours fully loaded with four R-73 and two R-27 AAMs. He was tasked with intercepting unspecified NATO aircraft 5,000 metres over the wider Sandžak area. While over the town of Tutin, Milenković was himself 'locked' but managed to evade four AAMs fired from NATO aircraft. He turned his MiG-29 around and landed safely back at Ladjevci. During the following days at Batajnica, high combat readiness was maintained by one or two MiG-29s and four MiG-21s, but again there were no take-offs. Then on the morning of 14 April, NATO aircraft attacked HAS and aprons of the 127th Squadron, causing serious damage, but the squadron kept the surviving MiG-29s on high alert until 19 April.[59]

Despite maintaining the highest state of combat readiness with the remaining MiG-29s, this did not result in any successes. However, their occasional take-offs kept NATO busy in maintaining intensive CAPs and carefully monitoring Yugoslav air space from AWACS that were orbiting nearby.

During this period, the Kosovan UCK guerrillas pressured the VJ (Yugoslav Army) border post at Košare by attacking it from nearby Albanian territory. On 12 April, the RV i PVO higher authorities ordered the 83rd Fighter Regiment at Priština to use four MiG-21bis armed with BL755 cluster bombs to help the VJ border unit, which was under heavy attack by UCK guerrillas and suffering casualties. That evening, the commander of the 83rd Regiment, Colonel Urošević, selected three of his more experienced pilots for this mission, which he would lead. General Smiljanić issued orders that the MiG-21s should take off at 1845 hours, but all four MiGs, which were outside the Rudnik underground complex, were in 'air defence' configuration, with AAMs below their wings. The armourers were ordered to take off the air-to-air missiles and replace them with

Assembly of a battalion of SNR-125 (NATO 'Low Blow') – or 'StVR' in RV i PVO parlance – tracking and missile control radars at an improvised position. (250.rbr PVO)

At the heart of each Kub-M (SA-6) battery was a 1S91 targeting radar, known in the RV i PVO as 'R-StON' (NATO 'Straight Flush'). Seen here on the move is No. 22357 of the 230th Self-Propelled Missile Regiment at Niš. (B. Dimitrijević)

BL755 cluster bombs. However, delivery of the BL755 bombs from their underground storage was slow, and at 1931 hours Smiljanić cancelled the mission. On the following morning, the orders to carry out strikes around Košare were withdrawn.[60]

By the end of April, the 83rd Fighter Regiment had used the short break in NATO daily strikes and successfully managed to relocate six MiG-21bis from Priština to other air bases. Four of them landed at Sjenica, while two others went to Niš. These sorties were carried at low level to avoid NATO fighters which were carrying out CAP missions. This deployment was made to disperse more MiGs to other bases, but it is unclear just what their combat purpose was because most of these MiG-21s became targets at the air bases where they had landed, and most were destroyed before the end of hostilities.

Other air bases to which MiG-21s were deployed from Priština on 24 March were under heavy attack from the initial night of Operation Allied Force. At Podgorica, a MiG-21 was destroyed on the afternoon of 25 March, with almost nothing left of it on the ramp after being hit. Another MiG there was damaged twice, on 15 and 29 April, with ground crew then taking it away from the base to save it from total destruction. At Niš, both MiGs were damaged on 16 and 23 April, while at Ponikve, one of the two MiG-21s was destroyed on 13 April. Later, as the air strikes continued, others MiGs were damaged: at Niš on 3 May and at Sjenica on 27 May and 3 June.[61]

The Yugoslav Navy Is Targeted

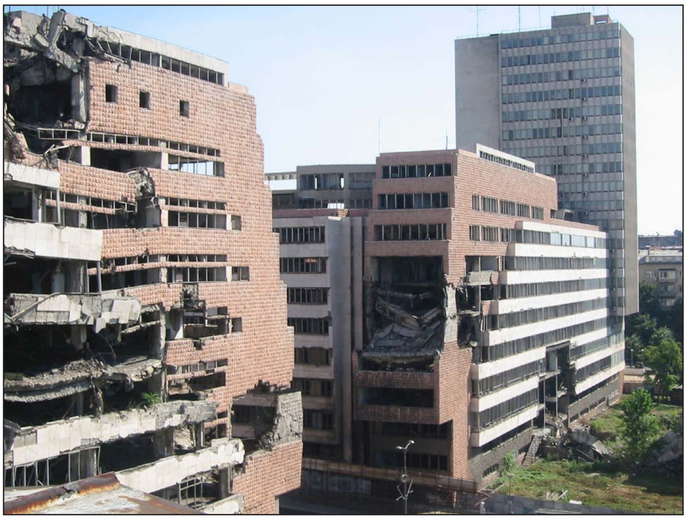
NATO naval forces had carried out a sea blockade of the FR Yugoslavia (Montenegro) coast since 6 June 1992, from the early days of war in Bosnia and Herzegovina. The NATO ships remained on patrol during Operation Allied Force, mostly some 60-120 miles from the shore, now supported by numerous other ships which entered the Adriatic escorting the aircraft carriers. In such conditions, there was no possibility of a successful naval/missile attack by the Yugoslav Navy which would not be punished immediately. The Yugoslav Navy thus remained anchored in the harbours of the Montenegro coastline.

From the very first moments of Allied Force, NATO carried out strikes on targets that were in the Yugoslav Navy's area of responsibility, mostly radar, coastal surveillance or ELINT stations, the first belonging to the RV i PVO and the others to the navy. Between 2000 and 2200 hours on 24 March, NATO forces destroyed sites on the prominent heights of Mount Obostnik, Crni Rt and Mavrijan, all belonging to the navy. These caused a notable downsizing of the Yugoslav Navy's command system and possibility for ELINT operations. At Mount Crni Rt, two S-600 radars of the RV i PVO's 58th Air Surveillance Battalion were destroyed that night, besides a naval Decca-1226 mobile surveillance radar.[62]

The next strike occurred on 1 May, when a communications centre at Mount Štirovnik was destroyed with four AGM-130 guided missiles delivered by F-15Es from the 494th Squadron.[63] Later, when the political decision was taken to exclude Montenegro territory from the target list, and when the most important surveillance/radar sites had been destroyed, the air strikes all but ceased, apart from the occasional one.

During late May, the crews from the anchored Yugoslav ships and naval light AA batteries opened fire on Unmanned Aerial Vehicles and claimed three of them: an RQ-2 Pioneer near the small island of Mamula on 24 May, another one on 27 May at Cape Mavrijan and a RQ-5 Hunter on the Luštica peninsula on 28 May. NATO reacted soon after with, with air strikes on 28 May at the test range at Plantamuni and on the coastal artillery battery at Cape Arza, Luštica. Two days later, the attack was repeated on the same positions with two A-10s, using munitions with depleted uranium. The area consequently remained contaminated for several years. On 1 June, the Yugoslav Navy allegedly claimed another UAV in the bay of Risan.

A total of 21 NATO aviation strikes were noted, with some 60 different projectiles, in the Yugoslav Navy area of responsibility.[64] But after the initial strike on the radar/ELINT/communications infrastructure, and the response in late May following the claiming



Buildings of the Yugoslav General Staff (left) and Ministry of Defence (right), destroyed during a night attack on 30 April. Even 22 years after Operation Allied Force, these buildings remain in almost the same ruined condition. (B. Dimitrijević)

of the UAVs, NATO did not target the Yugoslav Navy's ships or infrastructure during the whole operation.

Cases of Collateral Damage

Both sides reviewed the toll of the previous period of Operation Allied Force on 13 April. General Clark informed a press briefing that 5,926 sorties had been carried out, 1,687 (28 percent) of which were offensive missions. These hit 102 targets, destroying 20 of them and heavily damaging another 24.

On the same day, in its internal analysis, the RV i PVO counted 17 of its personnel killed and 42 wounded (these figures not including losses among VJ ground forces and Ministry of Interior special purpose units). The most-attacked RV i PVO units were those of the air surveillance: in 20 attacks on 18 such positions, 60 percent of its air surveillance units (eight radar companies and two independent platoons) were put out of service. Missile air defence units lost around 28 percent of their strength: three Neva (SA-3) and six Kub (SA-6) units. The highest losses were suffered in the aviation units, with 47 aircraft destroyed and another 41 damaged. This amounted to a 27 percent loss, but among those losses, half belonged to the combat aviation.[65]

In a short television news report from the Aviano apron, some two weeks into the operation, Lieutenant Colonel David Goldfein, commander of the 555th 'Triple Nickel' Squadron – one of America's most notorious fighter units – explained the current situation and targeting process in Allied Force:

> I think the world is watching the news every day and is looking for immediate battle damage assessment for this war to get to a critical point and end. But again, this is a deliberate campaign that has a process of targets that we will go after in order to take down these things that he [Milošević] holds dear. And we are stepping along that time line and taking out these targets. There are no targets that we are going after that are not important, that are not worth taking the risk that our pilots take to go after them. They are all part of a much larger picture that has been well thought out by our senior leadership.[66]

This was a simple airman's explanation of recent events. However, more problems would soon appear, with the intensive air campaign throughout Yugoslav territory starting to cause serious cases of collateral damage among civilians.

The first serious such case happened on 12 April, when a passenger train was hit in the Grdelica gorge by PGMs launched from an F-15E, killing 12 civilians and seriously wounding another 15. It was the first event which NATO labelled as 'collateral damage'.[67] General Clark explained at a press conference that the pilot had targeted a bridge on which a passenger train unexpectedly appeared. Firing its AGM-130s from distance, the crew was not aware of the exact situation on the ground. They even repeated the attack. Huge media criticism of the NATO air campaign emerged the same day, from the Serbian media to Amnesty International, which requested a meeting with the highest representatives of NATO.

Two days after this tragedy, another one occurred on 14 April, this time with even more severe loss of life. In an attack on a refugee column around Djakovica, a total of 82 ethnic Albanians were killed and over 50 wounded.[68] Pentagon spokesman Kenneth Bacon initially accused the RV i PVO of carrying out this attack, but at the regular press briefing on the following day, NATO spokesman Admiral Marani confirmed that it was another case of collateral damage. It was the most serious case of collateral damage in the whole campaign, and was paradoxically against ethnic Albanians, who actually sided with NATO.

General Daniel Leaf, commander of 31st AEW at Aviano, explained on 19 April that there were two strikes on the column using GBU-12 bombs, the pilots having believed that it was a military convoy. Leaf accused Serb forces of also being involved, claiming that "after NATO attacked the front military vehicles, Serb aircraft attacked the Kosovar Albanians refugees in the rear."[69] This accusation was later disputed by an Amnesty International investigation, which showed that no Serb military vehicles or combat aircraft were involved in the incident. As noted earlier, RV i PVO commander General Smiljanić had cancelled any CAS missions in support of ground forces in the border area of Metohija. Other strike missions from air bases in Serbia had been stopped by the beginning of April.

As well as such tragic events causing much loss of human life, they enabled the Serbian media and propaganda to take advantage of the situation with further accusations of collateral damage. Fear of collateral damage, especially against ethnic Albanians, meant that more restraints and limitations were introduced on the conducting of air strikes. Such limitations irritated nearly all of the USAF senior leadership, who had felt frustrated from the beginning of the operation. They accused the politicians of preventing them from unleashing the air force's potential.

Meanwhile, the number of strictly military targets started to decline. The choice became more limited since the main Yugoslav Army military targets had already been hit, and now only those targets in urban areas remained. The focus now started to turn even more to targeting infrastructure that was used by the Serb military, but were actually civil structures such as bridges, communications, power stations and even TV and radio networks. It also included Slobodan Milošević's governmental facilities and those of his Socialist Party of Serbia. Even Milošević's official residences were soon attacked in the elite Belgrade suburb of Dedinje.[70]

Another case of collateral damage occurred in this period on 23 April, when the Serbian Radio and Television (RTS) building in central Belgrade was hit and badly damaged at 0220 hours. Sixteen workers from the night shift were killed, with many others wounded. At the next day's NATO press conference, Colonel Freytag claimed this attack was not an incident of collateral damage, but one which had the purpose of downsizing the Yugoslav command structure and degrading its propaganda apparatus. The legitimacy of this target was debated for a long time after.[71] Milošević's television station was regarded by NATO as an instrument of propaganda and repression, and such an appraisal was shared by many among the Milošević opposition in Serbia. Nevertheless, the RTS building was in the centre of Belgrade, with many of the station's personnel constantly in the premises, which no doubt led to the high death toll. On the other hand, the Milošević regime did nothing to warn the RTS employees to abandon the building upon the first sign of the air raid, as had been the practice in many other cases before; the victims were needed to justify the political cause.

5

OPERATION ALLIED FORCE AFTER THE NATO JUBILEE SUMMIT

From mid-April to the beginning of May

The turning point in Operation Allied Force was the 50th Anniversary NATO Summit in Washington. Initially tailored as a short air campaign which would be followed by the continuation of diplomatic talks, the operation had turned into a serious air war. At the NATO Summit, the allies decided that the war had to be won. The aims of the operation which had been outlined by President Clinton on the evening of 24 March were redefined. It was now proclaimed that Allied Force was being conducted to stop the military action and violence in Kosovo, aiming for the complete withdrawal of all Serbian/Yugoslav military, police and paramilitary forces from Kosovo, enabling an international military presence in the province, the return of refugees and providing further humanitarian assistance, and ensuring a political process where the Serbs would abide by the results of the Rambouillet talks, international law and UN charters.[1]

The new aims for Allied Force were much more concrete and were understood by all the NATO allies, who started to implement them much more firmly than before. Those aims were later implemented in Kosovo when the operation was over. But what is interesting (and worrying from the point of view of the truth) is that most Western analysis and comment about these 'Washington aims' date not to the 50th Anniversary NATO Summit in Washington, but to the beginning of the Allied Force campaign, as initial aims. There is no explanation that they were later, redefined aims after a month-long air campaign.

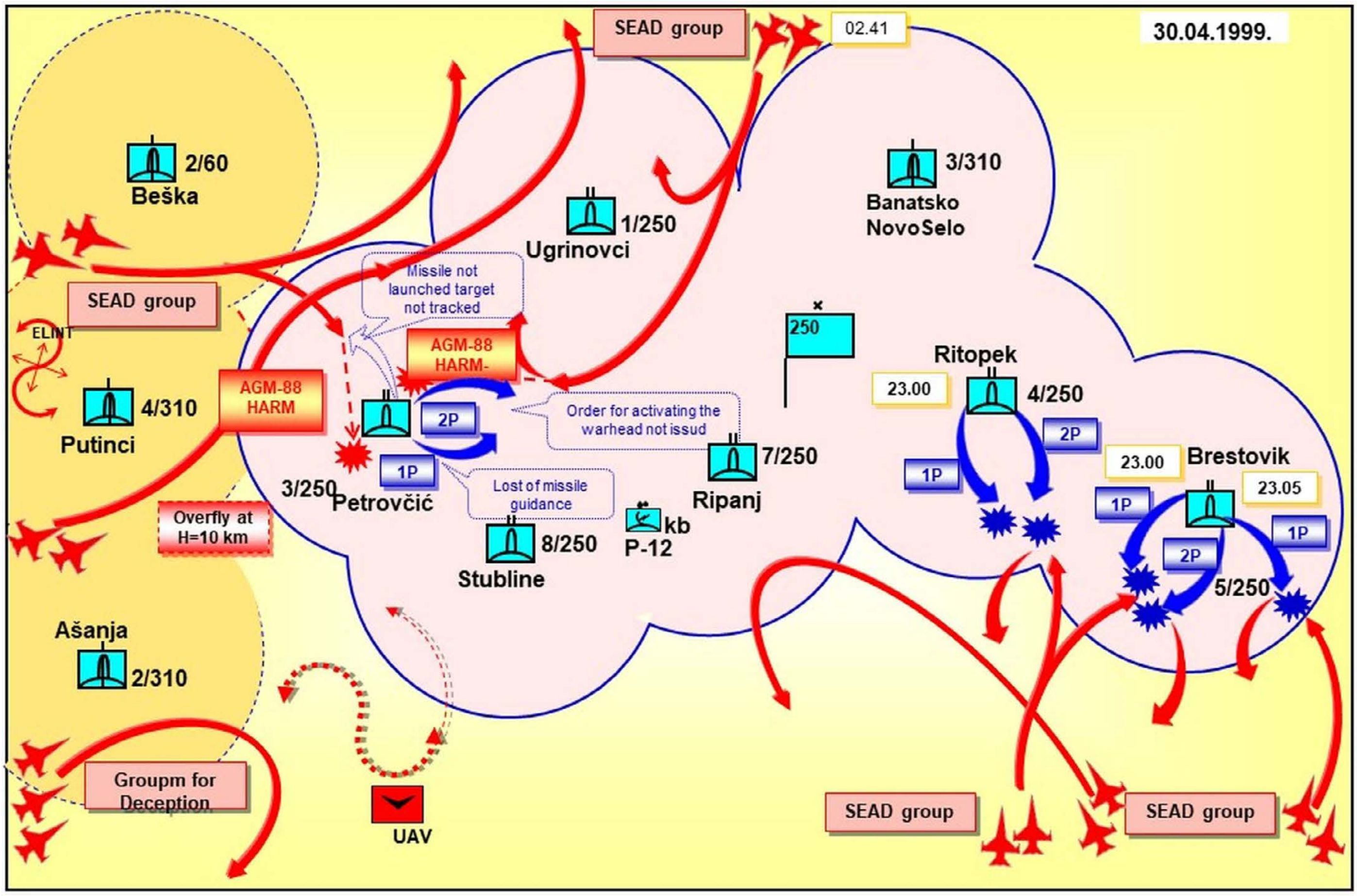
On the following day, NATO released a statement which said that it had achieved air supremacy in the region at middle and high altitudes, and that it had severely damaged the Serbian air defence system. Three days later, at another press conference, it was stated that NATO had destroyed 70 enemy aircraft, along with 40 percent of their SAM-3 and 25 percent of their SAM-6 missile systems. However, it was said that Serbia still crucially had a viable system for communications and command.[2]

In the second half of April, NATO continued to hammer the Serbian air defence assets. Air strikes especially targeted air surveillance units. The tempo of operational capability decline of the RV i PVO radar network started to worry the Yugoslav senior leadership, since this trend inevitably led to the disappearance of a radar 'picture' of the NATO air forces' combat activities. In this period, during a total of 18 NATO attacks, four more radar stations were destroyed. Missile units were targeted 36 times, among them seven attacks on dummy firing positions. Thirteen more air defence personnel were killed and dozens wounded.[3]

The intense struggle between the Serbian PVO and USAF strike packages in the wider area of Belgrade continued. Two examples illustrate events during this period.

Destroyed targeting radar and other equipment of a missile battalion of the 250th Missile Brigade at the Boždarevac firing position on 2 May 1999. (250.rbr PVO)

A citation accompanies the award of the Air Medal to Captain Robert Waldman from the 78th EFS for a combat that he had with Serb air defence units on the night of 28 April. Waldman was number two in a four-ship SEAD team which protected B-2A bombers "striking critical targets in the centre; and northern portions of the FRY." The combat report of the 250th Missile Brigade relates that at 0032 hours, the 3rd Missile Battalion, at a firing position near the village of Petrovčić, launched a single missile on a target at azimuth 300, a distance of 18km and altitude of 7,000 metres. The other missile remained on the launcher due to a firing failure. The report states that the target carried out anti-missile manoeuvres and launched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Plan of the combat mission of the 250th Missile Brigade and attached Kub batteries on the night of 30 April 1999. (Jovica Draganić)

IC decoys, causing the Neva missile to miss. Waldman's citation said that he employed countermeasures and skilfully manoeuvred his aircraft to successfully defeat the missile. Shortly after, at 0040 hours, the attached 3rd Self-Propelled Battery of the 310th Self-Propelled Missile Regiment (equipped with Kub-Ms) launched a pair of missiles at azimuth 0, a distance of 10km and altitude of 5,200 metres. The result of this launching was marked down as 'unknown'.[4] Waldman's citation continues: "Shortly thereafter, Captain Waldman was again aggressively targeted by another SA-3 battery and successfully defended against two more missile launches guiding towards his aircraft … The successful coverage of this vital mission permitted the success of this priority strike package."[5]

Two nights later, another stealth F-117A was hit in the early hours of 30 April, but managed to land safely at Spangdahlem with damage to its tail. It was initially difficult to determine which unit of the 250th Missile Brigade had managed to hit the stealth fighter, but it was later confirmed that it was again the 3rd Battalion, which had launched a missile at 0241 hours. The battalion was at a firing position near Petrovčić and had launched two Neva missiles, one of them hitting the F-117A at azimuth 53, a distance of 16km and altitude of 7,000 metres. The battalion was targeted at the same time with AGM-88 HARM, but the missile fell harmlessly 300 metres away from the unit's SNR-125 (StVR) missile control radar. A report noted that both missiles missed the target,[6] but that was not the case. The F-117A's pilot, Charlie Heinlein, later explained: "I kind of looked to the right over Belgrade and saw this huge approaching rocket that looks like a Saturn V. I knew my other partner was out there somewhere. Then I see another launch – a large glow, and even from this distance you can see a lot of details. The plume, the outgoing smoke and then this fireball approaching you." Heinlein managed to abort the mission, head into Hungarian air space and return to Spangdahlem. He was later rewarded for successfully managing to return the stealth fighter back to base.[7]

During this period, B-2A Spirit stealth bombers conducted several missions against targets around Belgrade. They were usually backed by SEAD groups which covered the Serb air defence positions during their attacks using JDAM.

The air attacks continued in Kosovo, where difficult weather conditions again produced many problems for NATO, as had been the case in the opening days of Allied Force. The RAF complained that its Harrier GR.7s were unable to hit their targets but General Charles Guthrie, Chief of the British Defence Staff, stressed that no matter what the weather conditions were, the operations would continue. They were mostly using BL755 cluster bombs, as the Serbs had earlier. The strike attacks also continued above the 44th parallel.

General Charles Wald told a press conference on 1 May that a GBU-28 'bunker buster', a 4,600lb or 2.23 ton bomb, was used in an attempt to penetrate an underground complex at Priština on 26 April. It was dropped by an F-15E Strike Eagle belonging to the 494th Squadron. The bunker-busting version of the GBU-28 made its debut in Allied Force.[8] This bomb was later used a number of times against the underground '909' complex at Straževica in Belgrade but without success, except for its tremendous effect on the local population.

On the same day, at 1515 hours, a cloud of leaflets was dropped over Belgrade.[9] This was a new element in the propaganda war. According to historian Daniel Haulman, two additional MC-130s from the 7th Special Operations Squadron at RAF Mildenhall flew seventy-three combat sorties to drop psychological warfare leaflets over Serbia, having picked them up at Ramstein. Supplementing the leaflets were radio broadcasts from a pair of 193rd Special Operations Wing EC-130s that flew eighty-one combat sorties from their deployed base at Ramstein.[10]

Many different leaflets were dropped over Belgrade or Kosovo up until the end of the operation. Later, during May, a television broadcast was emitted from airborne platforms, but with limited success: there was a low picture quality and it was difficult to find, causing even the most interested Serbs to lose their interest in such programmes.

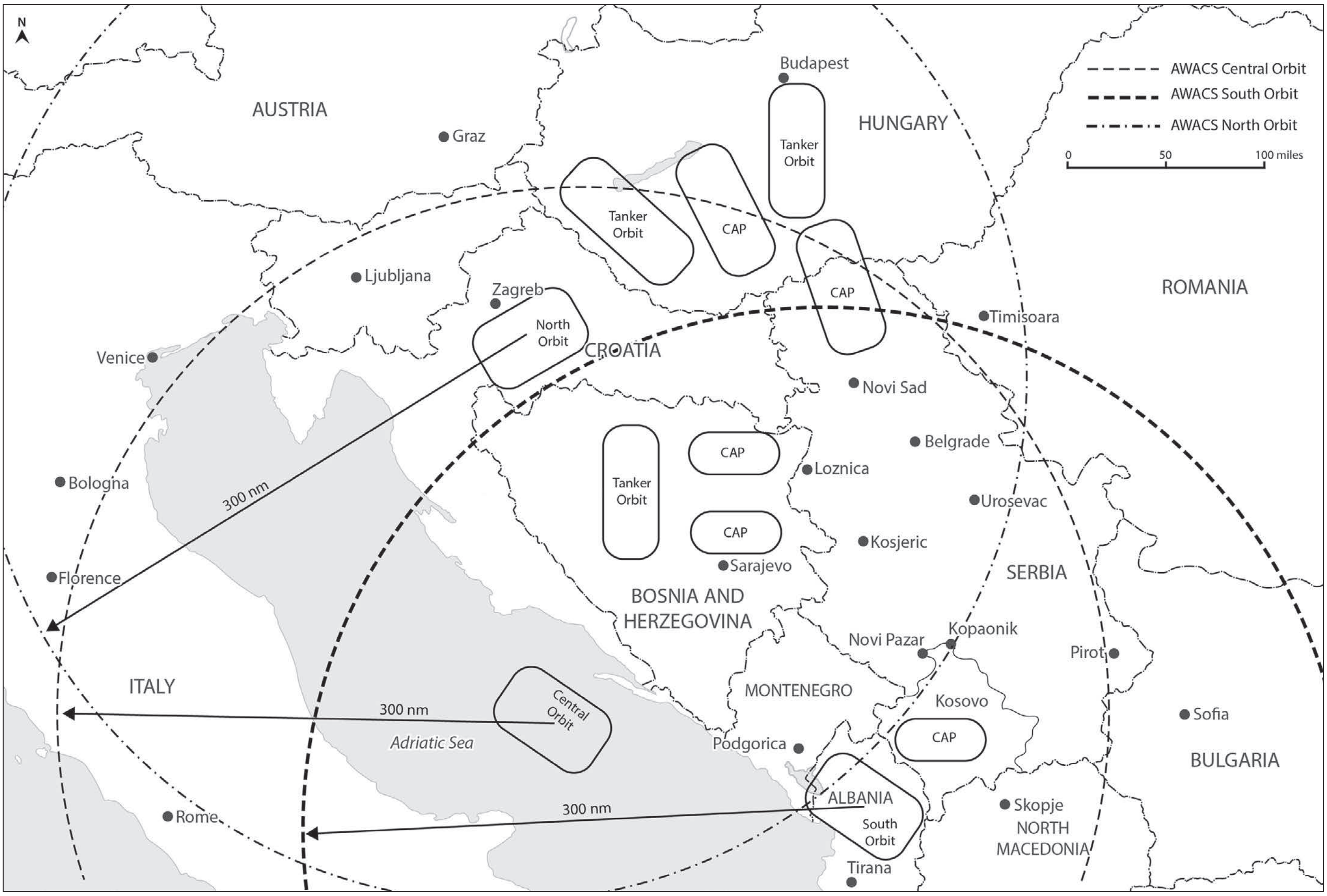
Hammering the Air Bases

NATO continued to hunt the RV i PVO aircraft that had been dispersed and hidden at the bases until the end of April, More than 46 aircraft were destroyed and eight more damaged. The most serious loss was at the Golubovci–Podgorica Air Base in Montenegro on 15 April, when the entrance of the underground 'Zeta' complex was hit by an LGB (laser-guided bomb) and fire spread through the open doors into the complex. The outcome was disastrous, with a total of 26 G-2 Galebs and G-4 Super Galebs of the 172nd Aviation Brigade caught up in the blaze. One NCO was killed. Nearly the whole training aviation of the RV i PVO had been lost in a single day. As a result of this incident, the commander of the Golubovci 423rd Air Base and four of his aides were dismissed.[11] Five more attacks were launched against the same base from 27-29 April, but mostly on the infrastructure and aircraft caught in the open. In these attacks, the helicopter fleet of the 784th ASW Squadron (Mi-14PLs and KA-25s) was destroyed. Two of the most modern KA-28s managed to remain hidden and survived the attacks.[12] Podgorica Air Base was also attacked several times by F-14s of the 8th Carrier Air Wing from USS *Theodore Roosevelt*. According to historian Gert Kromhout, "For the US Navy pilots, those were memorable missions."[13]

There had been a lengthy debate among the allies as to whether locations in Montenegro should be targeted, since serious opposition was shown by its president, Milo Djukanović, to Yugoslav leader Slobodan Milošević. Nevertheless, approval was issued from the White House on 15 April. General Clark commented that Golubovci Air Base was targeted as a preparation for the deployment of

Technicians of the 509th Operations Group at Whiteman AFB work to remove a tie-down strap on a trailer load of Mk 84, 2,000lb bombs during day 27 of Allied Force. (NAC)

On day 27 of the NATO attacks against Yugoslavia, the B-2A bomber named *Spirit of Mississippi* is seen waiting for weapons to be loaded with Mk 84 JDAM kit at Whiteman AFB. (NAC)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ALBANIA
Skopje
Rome
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South Orbit
NORTH MACEDONIA
Tirana

A map depicting NATO's organisation of the battlefield around late April 1999 until the end of Operation Allied Force. Note – amongst others – an additional AWACS-orbit over Albania: another one was also regularly maintained over Hungary. (Map by George Anderson)

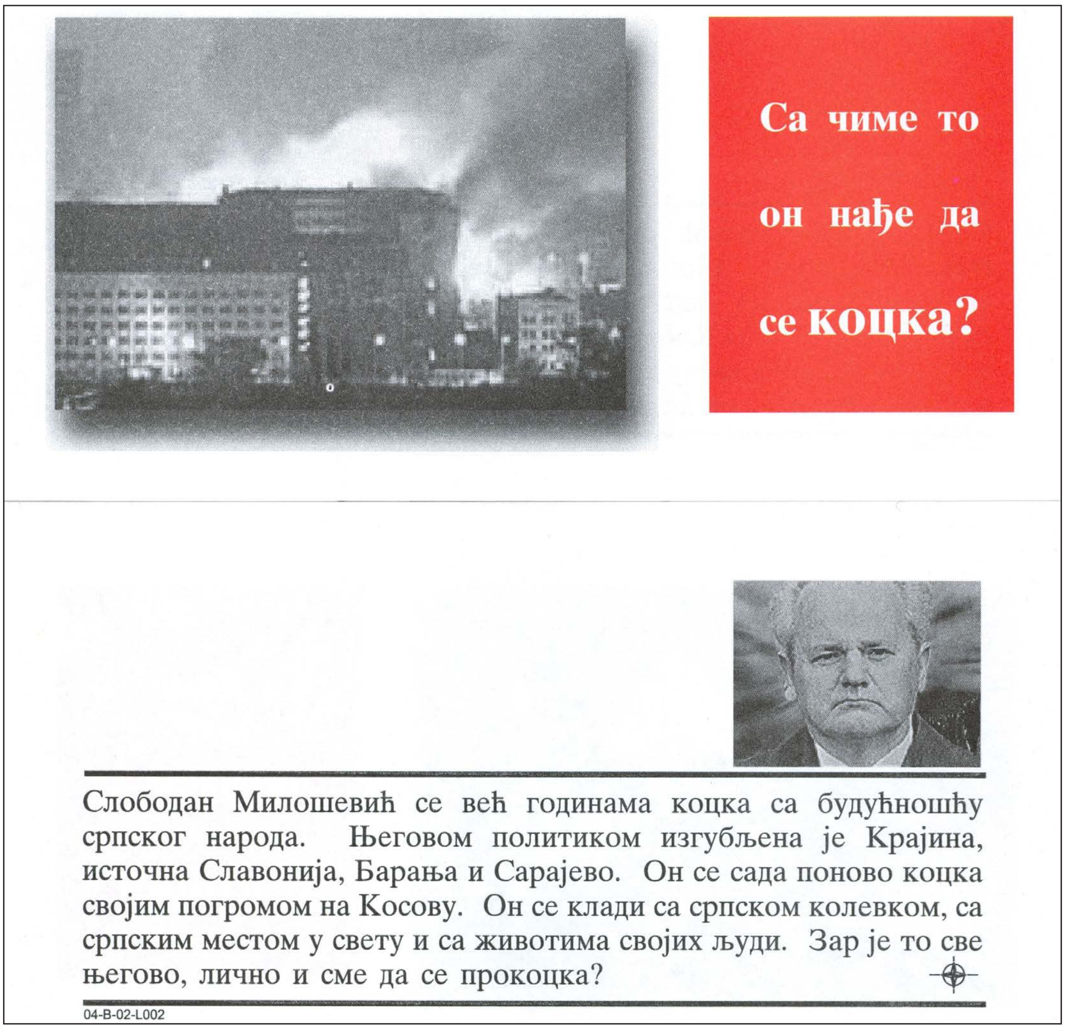
Apache helicopters to Albania.[14] Yet despite the military-political background of the air attacks in Montenegro, it was actually the ill-discipline of RV i PVO personnel in failing to close the doors of the underground complex that allowed the success of this sudden attack.

Throughout this period, all RV i PVO air bases in Serbia were targeted. At Priština, beside the infrastructure being targeted, NATO strikes on the underground Rudnik complex continued from the first night of Allied Force. It was soon discovered that it was psychologically difficult to remain in the underground complex during the air attacks, which continued every night. Vibration, clouds of dust and earth, and fear of being crushed inside the complex resulted in an order being issued on 1 April that all personnel should abandon Rudnik and move to villages in the vicinity of the air base. But Rudnik had proved its effectiveness. It had suffered 17 air strikes, mostly direct hits, but was not destroyed. On one night later in April, missiles hit the protective cover and damaged the northern entrance to the complex. General Smiljanić inspected the site and approved a suggestion by the commander of the 83rd Regiment, Colonel Urošević, that aircraft which were in the underground complex should remain, no matter what damage there was to the entrance. All of the MiG-21s inside the complex remained intact and airworthy. However, the MiG-21s outside the underground complex became targets for the NATO strike packages; in total, six MiG-21s were destroyed in the open at Priština.[15]

At Batajnica, the attacks on 20 and 22 April were especially serious, causing heavy damage to the 204th Fighter Regiment and 177th Air Base infrastructure, including fuel storage, regimental HQs, pilot and ground crew barracks, an AAM testing station, automobile park with garages, quartermaster storage and even a single MiG-29 parked near a taxiway. The losses were mitigated by the dispersal and hiding of materiel over the previous days. Nevertheless, losses were heavy. In further attacks, NATO targeted all the MiGs that were discovered hidden around the air base.

A nocturnal air attack on Batajnica occurred before dawn on 8 May, with serious damage caused to the infrastructure between 0307 and 0318 hours. One MiG-21 with a complete AAM load under its wings was destroyed, while two others and a single two-seater were damaged. They were dispersed around the base at the time of the NATO strike. During an afternoon strike on 11 May, another MiG-21 was destroyed, with one more badly damaged. They had been spotted on a nearby motorway. In a strike on 17 May, between 1306 and 1316 hours, another MiG-21bis was destroyed on a road leading to the base from the nearby village of Banovci.

After three MiG-21s were destroyed and an additional four damaged in air attacks between 8 and 17 May, the HQ of the 204th Fighter Regiment suggested to the Operations Centre of the Air Defence that the remaining MiGs should be disassembled and taken away from the base into civilian premises surrounding the base. The regiment HQ tried to convince the higher authorities that in their opinion it was vital for the survival of the MiGs that they should be moved away from the base, as they were being targeted by the daily NATO strikes. On Friday, 21 May, the process of disassembling the MiGs began. But despite the order being issued to do this, it was difficult to carry out the task properly since NATO carried out intensive daily attacks on Batajnica during this period. On 25, 27 and 28 May, three more MiG-21s were slightly damaged, and around 0210 hours on 29 May, another one was destroyed. At midnight on 7 June, the last of the 204th Regiment's MiG-21s was set ablaze, having



Са чиме то он нађе да се коцка?

Слободан Милошевић се већ годинама коцка са будућношћу српског народа. Његовом политиком изгубљена је Крајина, источна Славонија, Барања и Сарајево. Он се сада поново коцка својим погромом на Косову. Он се клади са српском колевком, са српским местом у свету и са животима својих људи. Зар је то све његово, лично и сме да се прокоцка?

04-B-02-L002

Examples of leaflets dropped over Belgrade during May 1999. (Author's collection)

been discovered by NATO aircraft in one of the remaining HAS at Batajnica.[16]

At the suggestion of Major Ivanov from the 204th Regiment HQ, a project to produce dummy MiG-29s was approved. Soon thereafter, the production of dummy MiGs for Batajnica started in the nearby villages of Nova and Stara Pazova, both of which were well-known for small-scale manufacture and production of different goods. The project and initial production lasted for about four weeks. The first dummy MiG, labelled M-18, was rolled out on 27 April and parked on the taxiway of the 127th Squadron. The mock-up MiG-29 was deemed to be a success and General Smiljanić approved the serial production of five more M-18s, which were finished between 20 May and 1 June. The first dummy was destroyed during a night attack on 2-3 May. Three other M-18s were destroyed and another one damaged in a night attack on 7-8 June, near the end of the campaign. One of the M-18s remained and was later sent to the Yugoslav Air Force Museum.[17] It was estimated that the use of dummy M-18s was a successful deception project and actually help the RV i PVO preserve at least five MiG-29s at the end of Operation Allied Force.

An F-16C Is Claimed

Despite the heavy pressure on the RV i PVO, with its human and material losses during April, the Serbian air defence system remained a threat to NATO aviation. Any kind of procedure failure could be used to their advantage by the Serbian missile units. This was the case in the early hours of 2 May, when the 3rd Missile Battalion of the 250th Air Defence Missile Brigade claimed another USAF aircraft.

The second NATO aircraft lost during Allied Force was an F-16CG, serial 88-550, which belonged to the 555th EFS of the 31st EAW at Aviano. The plane, with the call sign 'Hammer 34', was piloted by Lieutenant Colonel David Goldfein, who was at that time the commander of the 555th Squadron. Later, as a four-star general, he was the 21st Chief of Staff of the USAF.

Ground crew of the 83rd Fighter Regiment and 492nd Air Base at Priština load an R-60 (AA-8 Aphid) AAM missile on an improvised launcher. (M. Špica)

Close-up image of the destroyed entrance of the underground Rudnik complex at Priština Air Base. (M. Špica)

A destroyed NJ-22 Orao (25526, GTA-002) after being targeted on the night of 28-29 May at Batajnica Air Base. In the background is a seriously damaged G-4 (23640, GTA-003). Being used as ground training aircraft, both remained on the aprons and were destroyed. (204.lap)

One of the destroyed MiG-29s on a taxiway at Batajnica. (204.lap)

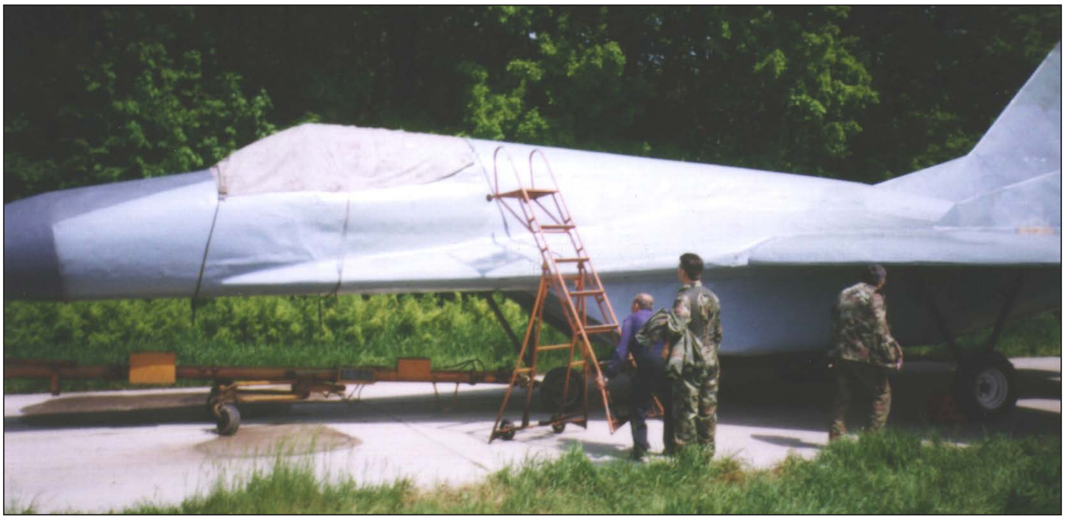
Goldfein had intended to strike the missile unit around Novi Sad with GBU-12 PGMs when he was hit by a missile at an altitude of 4,300 metres. When his aircraft crashed, it was discovered that the F-16CG was equipped with a standard set of AAMs, targeting pods and also an AN/ALE-50 Towed Decoy System. Two GBU-12 bombs remained intact after the crash and did not explode. They were detonated later after the war.[18] Contrary to earlier reports, Goldfein was brought down before managing to carry out his planned strike.

Seeing this event from the Serb side, the 3rd Battalion was at a firing position in the village of Karlovčić. Goldfein's aircraft was tracked, and after receiving a signal, two V-601 missiles were fired at azimuth 315, a distance of 11km and altitude of 6,000 metres. The target was hit at 0209 hours. SIGINT records that one of the pilots of a group of four F-16Cs reported that he was hit in the engine and would try to escape to the west, gliding for as long as he could, but was rapidly losing altitude.[19] According to the recorded radio communications, Goldfein struggled to keep his F-16 gliding for more than four minutes. He said over the radio "Start finding me, boys." He had obviously lost the notion of his exact position. Goldfein finally ejected at some 4,000-5,000ft, having said: "OK boys, you got a lock on me?"[20] His next contact was from the ground: "I am OK, and I am on the move!"[21]

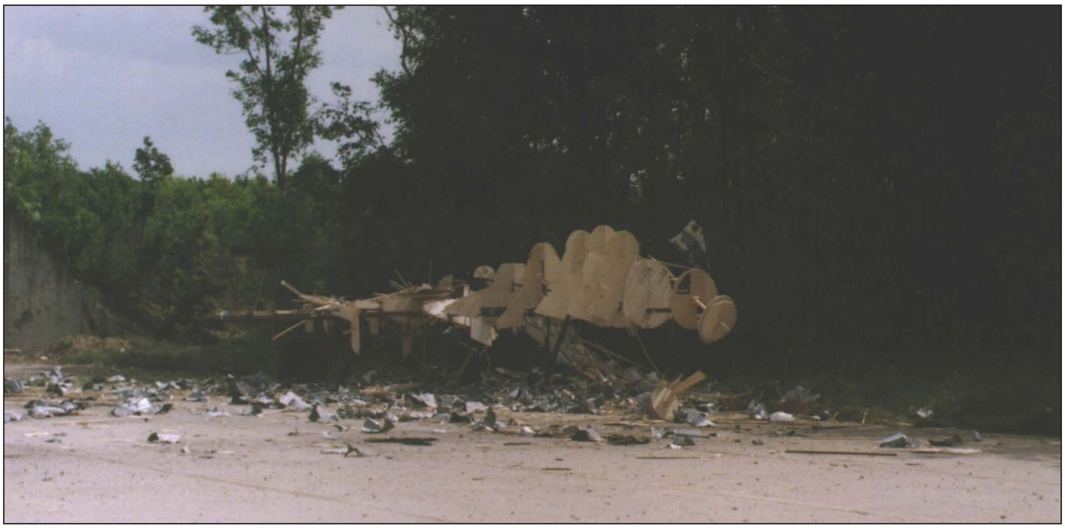
"It's crazy what goes through your mind," Goldfein later explained. "All of a sudden, sanity gets there and says, 'What's going to happen when I actually do bite through this?'" He did not know how far he had glided and had no idea whether he had bailed out in Bosnia or Serbia. Goldfein spent almost an hour weaving from tree line to tree line, moving through ploughed areas. Finally, he made it to an ideal rescue spot: he had a tree line to his back, a field to his front that was waist-high with crops in which he could hide, and a pretty good sense of the direction from which the rescue helicopters might come. With time to kill, in enemy territory, the only thing he could do at that point was to hide and wait.[22]

After refuelling in Bosnian air space, three other F-16s returned to Yugoslav air space in an attempt to locate their downed commander. They were soon joined by four F-16CJs from the SEAD group. The CAOC at Vicenza ordered that all activities in the theatre should be paused. An ABCCC immediately left its position in the south, moving to orbit in northern part of what was known as 'Puffy' Zone north of Sarajevo. A CSAR group was formed with three F-16Cs from Goldfein's group and eight other F-16s, added to in the following hour with 16 F-16CJs and 10 EA-6Bs for SEAD, four A-10s for CSAR support, two MH-53 helicopters for extraction of the pilot and a single MC-130H/P acting as tanker for the MH-53s. Eight Apache helicopters based in Tuzla were also added to the group. Eleven tankers were also in the air, creating a refuelling zone just over the border between Serbia and Bosnia, in the area around Loznica and Bijeljina. Throughout the rescue operation, EA-6B Prowlers constantly jammed the Serbian air defence.[23]

After the pilot was located and properly identified, the rescue party entered Yugoslav airspace at 0355 hours. They comprised two MH-53Js and a single MH-60G, which took off from Tuzla Air Base. At 0400 hours, they were targeted by portable MANPADS from three different directions. At the marked spot for the rendezvous with the pilot, there was nobody there. Upon receiving new information that he was 17 miles away, the extraction group continued their



One of the first MiG-29 mock-ups being towed into Batajnica Air Base in late May. They proved an effective deception tool which saved what remained of the RV i PVO MiG-29s. (204.lap)



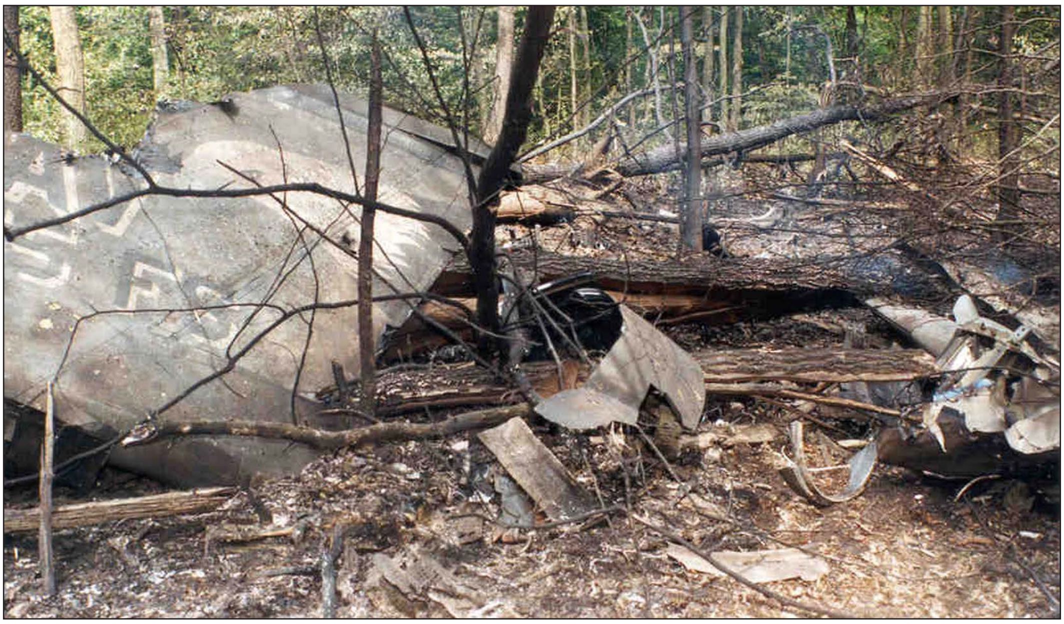
A dummy MiG-29 after being destroyed in one of the attacks on Batajnica Air Base. (204.lap)

flight. They were occasionally fired upon from the ground, the crews returning fire from their side doors. Goldfein proved almost impossible to find, despite clear coordinates and occasional communication with him. Both the MH-53s overflew him, but the pilot of the MH-60 spotted the strobe light that Goldfein turned on. The pilot immediately took his helicopter down to Goldfein's position. Serb SIGINT registered that radio contact with the downed pilot was established at 0441 hours, that he was loaded into the helicopter at 0445 hours and that they then took off immediately.[24]

When his rescuers arrived, Goldfein put his arms over his head, showing his submission while the airmen confirmed it was him. "Our total authentication was, 'Let's go,'" Goldfein explained 20 years later to cadets of the USAF Academy.[25] The two MH-53s escorted the MH-60 on either side. Only random rifle fire was registered during an otherwise uneventful return flight to Tuzla. At 0600 hours,

An early dawn view of the Neva launcher at the Boždarevac firing position. Note the unusual three missile composition of the launcher. (250.rbr PVO) the rescued pilot took off in an MC-130H/P from Tuzla and was ferried back to Aviano.[26]

Goldfein continued flying until the end of the operation, logging a total of 34 combat sorites. As he used to say much later: "I brilliantly intercepted enemy missiles with my aircraft."[27] His name and rank were only revealed well after Operation Allied Force. As one of the CSAR A-10 pilots recalled, contrary to the case of Scott O'Grady in 1995, there were no press conferences, no smiles for the camera and no million-dollar contracts for the pilot's memoirs.


Wreckage of the 555th EFS flag aircraft, F-16C Block 40 (88-0550), which was claimed on 2 May by the 3rd Missile Battalion at Ždralovac woods near the village of Nakučani, on the slopes of Mount Cer in western Serbia. (250.rbr PVO)

Later on the same day, Serbian air defence units had another success, with the 4th Battalion of the 52nd Artillery Missile Air Defence Brigade hitting an A-10 over Klokoč, near Gnjilane (known in USAF parlance as 'G-town'). The Thunderbolt was hit in the engine, but pilot Major Phil 'Goldie' Haun managed to land safely at Skoplje airport.[28] TV news footage taken from behind the airport perimeter fence shows the parked A-10 alongside various NATO helicopters, with the explanation that "a damaged NATO A-10 fighter-bomber had to make an emergency landing on Sunday … One of the twin engines on the damaged bomber appeared burnt out, as the plane sat parked on a runway."[29] A large section of the engine cowling crashed to the ground, remaining with the 4th Battalion as a trophy and confirmation of its success.

Neither of these incidents affected the continuation of the air campaign. Indeed, if anything, the air strikes during May would become even harsher.

Air Strikes at the Beginning of May

After the NATO Anniversary Summit in Washington, the US State Department became more ardent in the target-widening process and managed to overcome French political resistance to proposed attacks on Serbia's electric power system. French approval for attacks on certain segments of the system "was received on April 29," according to General Clark.[30]

At 2145 hours on 2 May, NATO duly cut off power in Serbia by using a brand new type of weapon: the graphite bomb. The distribution centre at the Nikola Tesla power plant near Obrenovac was hit, and electric power was lost not only in Belgrade but also in wider parts of Serbia. The effect on civilians was tremendous, with silence and darkness suddenly spreading everywhere. The first attack on the power system upset the citizens of Serbia, who were even more angered when the water supply was disrupted soon after. The lack of electric and water caused a bread shortage and civic disturbance. The electric supply was switched back on the next day, following hard work by the local electric companies.[31]

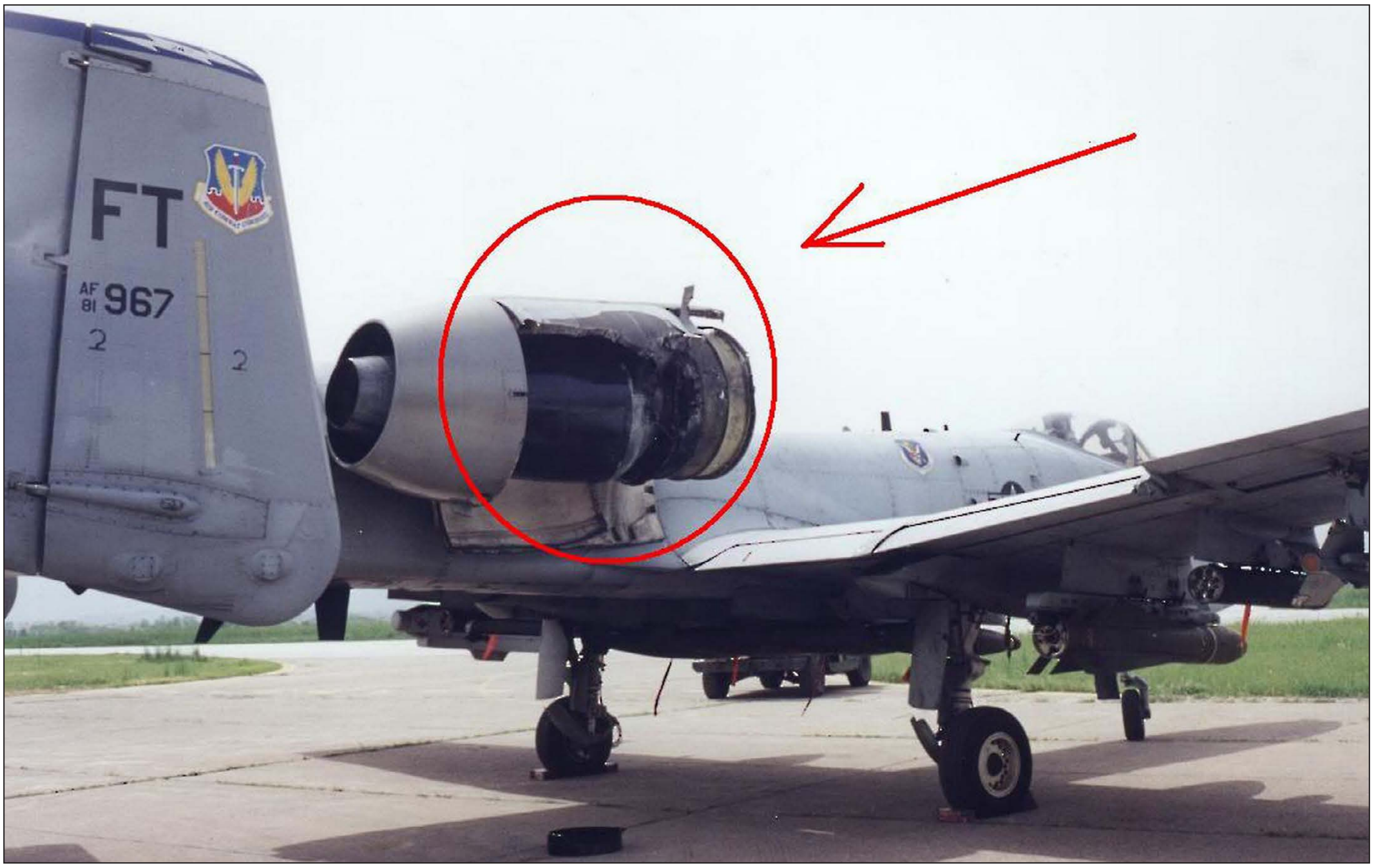
The BLU-114/B graphite bombs were dropped by F-117As. Until then, nothing was known about this type of weaponry. A graphite bomb exploded above the target, scattering large clouds of carbon fibres that came into contact with electricity transformers and prevented them from functioning. The USAF continued to drop graphite bombs on several occasions throughout May, but Serb electricians soon discovered how to cope with their effects and speeded up the restoration of the power system to a less than an hour.

NATO intensified the attacks on static targets at the beginning of May, using more BL755 cluster bombs and applying carpet bombing

Part of the downed F-16C's wing in the 250th Missile Brigade HQ at Banjica barracks, Belgrade, after the campaign. (B. Dimitrijević)

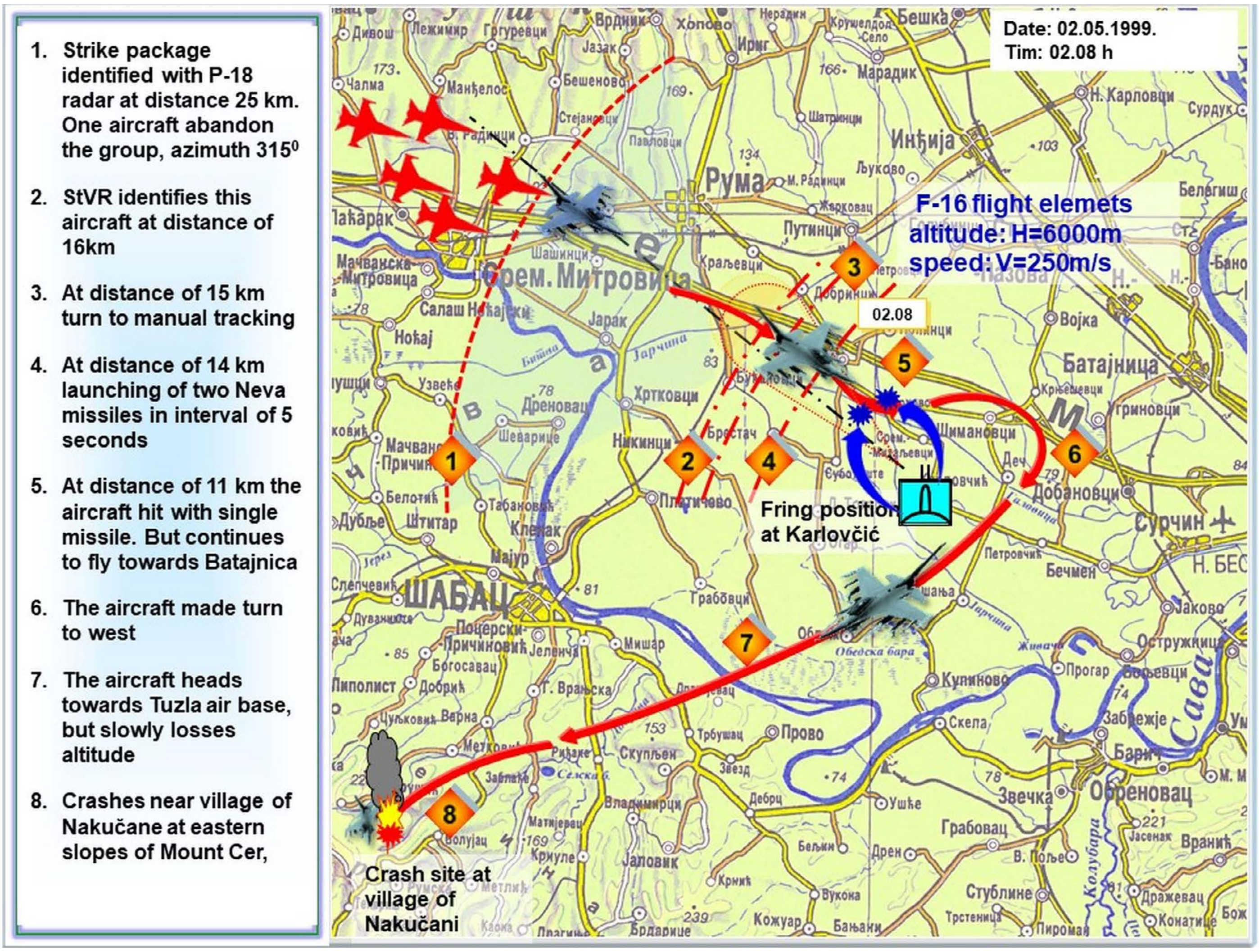
Lieutenant Colonel David Goldfein arrives back at Aviano Air Base in Italy after his harrowing shooting down and rescue in Serbia in 1999. (US DoD)

Special Operations soldiers and airmen who took part in Goldfein's rescue pose in front of an MH-53 at Tuzla Air Base, Bosnia and Herzegovina. (US DoD)



The damaged A-10 Thunderbolt, serial 81-967, carrying the code letters 'FT' for the 23rd Fighter Group based at Pope AFB, seen at Skopski Petrovac after its emergency landing. Part of the engine cowling is damaged. Note that the pilot did not manage to deliver his payload, but still landed safely with it after being hit by a missile.

across Kosovo and Metohija. Some of the targets were now attacked for the second or third time and General Clark explained that most of the targets needed at least a few hits.[32] The RV i PVO senior leadership perceived such practices as a method to get rid of surplus ordnance on easily identified targets, as was the case at Ponikve Air Base or the abandoned barracks of the Missile-Technical Battalion in the village of Sremčica, south of Belgrade. It appears that both sides were at this stage simulating 'high-tempo' conflict while waiting for a political solution to be arranged. NATO was targeting empty barracks and other buildings, while the Serbians were accusing NATO of hitting civilian targets.



1. Strike package identified with P-18 radar at distance 25 km. One aircraft abandon the group, azimuth 315⁰
2. StVR identifies this aircraft at distance of 16km
3. At distance of 15 km turn to manual tracking
4. At distance of 14 km launching of two Neva missiles in interval of 5 seconds
5. At distance of 11 km the aircraft hit with single missile. But continues to fly towards Batajnica
6. The aircraft made turn to west
7. The aircraft heads towards Tuzla air base, but slowly losses altitude
8. Crashes near village of Nakučane at eastern slopes of Mount Cer,

Reconstruction of how Lieutenant Colonel David Goldfein's F-16C was identified and brought down. (250. rbr PVO)

Commander of the 204th Fighter Regiment shot down over Valjevo

By the beginning of May, RV i PVO fighters had been completely wiped out of the sky. As described earlier, during April they had made occasional interceptions, guided by the air surveillance, and a couple of overflights. The shooting down of the 204th Fighter Regiment commander, Lieutenant Colonel Milenko Pavlovic, was a decisive moment, after which Yugoslav Air Force fighters ceased to operate until the end of the campaign.

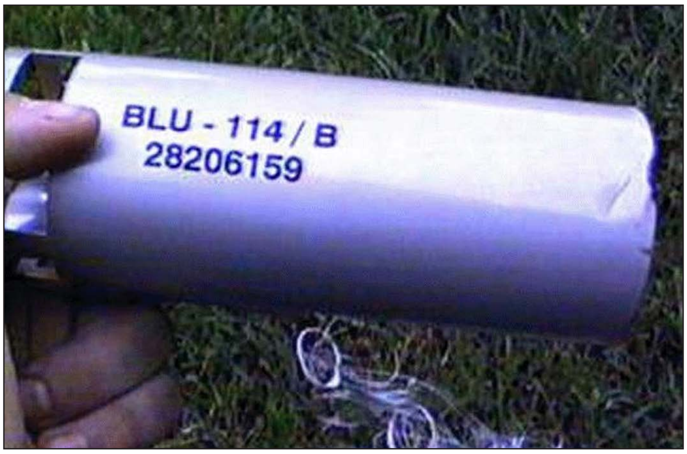
At 0706 hours on 4 May, the Operational Centre of the Air Defence alerted a pair of MiG-29s, one at Batajnica and the other at Belgrade International Airport. The MiGs were at the highest state of combat readiness, with pilots in the cockpits in shifts. At 1207 hours, the OC issued orders to take off. One of the MiG-29s at Batajnica had a malfunction with radio, so the pilot, Major Vladisavljević, clambered from the cockpit and waited for another aircraft to be prepared to take off. At the regimental command post was the 204th Regiment commander, Lieutenant Colonel Pavlovic, who was regarded as the best pilot in the RV i PVO after the only pre-war competition held in 1989. Seeing the problem with one of the MiGs and that the pilot had abandoned the aircraft, he angrily left the command post, went to the apron and got into the other available MiG (No. 18109). Pavlovic subsequently took off at 1237 hours.[33]

Pavlovic headed to Valjevo, some 100km south-west of Belgrade, climbing to 3,000 metres and avoiding the occasional anti-aircraft fire from the ground. The missile units of the 250th Air Defence Brigade were warned that a MiG had taken off to chase a pair of enemy fighters that were leaving Yugoslav air space and ordered not to open the fire. Pavlovic was promptly guided by the air surveillance unit to face one of the USAF formations some tens of kilometres away. Suddenly, at 1247 hours, Pavlovic's radio fell silent.[34]

The crew of an RAF Sentry AWACS from the 23rd Squadron had spotted Pavlovic's lone Serbian interceptor. They reported the contact to orbiting USAF aircraft in the surrounding area.[35] One of the SEAD group which was leaving Yugoslav air space, an F-16CJ of the 78th EFS (serial 91-0353), brought down the MiG with a single AMRAAM missile. The successful pilot was Lieutenant Colonel Michael H. Geczy and as in the other four aerial victories by USAF pilots over MiG-29s in 1999, the AIM-120 missile proved it could hit an enemy aircraft from beyond visual range.[36]

Radio amateurs enthusiastically reported that a combat aircraft had been shot down over Valjevo. Radio communications were full of congratulations: "Bravo Yugoslav Army!" or "Just that our mate had returned safe!" But there was no radar indication of the position of Pavlovic's MiG. Finally, at 1320 hours, confirmation came that the commander of the 204th Fighter Regiment had been killed when shot down over the village of Petnica near Valjevo.[37]

The effect on the RV i PVO was terrible, with everyone seeing it as a totally unnecessary incident. Pavlovic was the highest-ranking VJ commander to be killed in action, on top of which another MiG-29 had been destroyed. The outcome was that there were no further fighter activities by the Yugoslav Air Force.[38] The few remaining MiG-29s were grounded and hidden around the Batajnica Air Base.



BLU-114/B graphite bombs seen on Serbian television, after being discovered at the Nikola Tesla power plant near Obrenovac. F-117 stealth fighters dropped them and cut off the electricity supply in Belgrade and most of northern Serbia in early May. (extracted from video material)

General Charles Wald announced the bringing down of Pavlovic's MiG at the regular Department of Defense briefing later that day. He assumed that the MiG-29 was going after the strike package, but the pilot had not closed enough to fire his AAMs. Wald estimated that there were now only four Serb MiG-29s remaining.[39]

On the same day, General Smiljanić informed President Milošević that the operational function of the air defence had been downgraded by 60 percent, and that of the air surveillance by 80 percent, from the initial deployment on 24 March. The functioning of the Serbian air defence was thus seriously hampered. The remaining missile air defence units were gathered in the wider area of Belgrade and in Kosovo. Furthermore, a total of 124 aircraft had so far been destroyed or heavily damaged, with 380 targets destroyed and a further 330 damaged. All of the runways at the air bases had been hit and most of them were out of service, while the command/operations centres had been targeted 16 times. A total of 31 RV i PVO personnel had been killed and a further 65 wounded.[40]

Apache Failure

Meanwhile, General Clark lost one of the great 'jokers' in his pack: the Apache helicopters. They had made an unsuccessful debut, and had failed to live up to the lofty expectations that Clark and his staff had from beginning of Operation Allied Force.[41]

A dedicated task force – Task Force Hawk – had control of the Apache helicopters and was intended to operate from Camp Able Sentry based near Skoplje in Macedonia. However, the Macedonian government refused to approve combat operations from its territory against its northern neighbour of Serbia. Albania then said it would allow the Apaches to fly from its bases. Despite the infrastructure shortages and disagreements within the US Joint General Staff, President Clinton approved the Apaches' deployment to Albania on 3 April.

The commander of the 204th Fighter Regiment, Lieutenant Colonel Milenko Pavlovic, who was shot down over Valjevo on 4 May 1999. (204. lap)

Task Force Hawk was organised by the US Army V Corps and its headquarters. It consisted of a single helicopter battalion belonging to the 11th Aviation Group (sometimes referred to as a regiment) from Illesheim US Army barracks in Germany, initially equipped with 24 AH-64 Apaches. Subsequently, there were also a number of utility helicopters from the 12th Aviation Brigade at Wiesbaden, with around 30 UH-60L Blackhawks and CH-47F Chinooks. Task Force Hawk had its own land component, which was created around an artillery unit of the V Corps with 27 M-270 MLRS launchers from the 41st Field Artillery Brigade, an M-2 Bradley-equipped mechanized battalion, an armored company with M-1 Abrams tanks and other support units. It included a single battalion of the 505th

A MiG-29 at QRA at Batajnica during April 1999, being connected to APU on a ZIL-131 lorry nicknamed 'APA'. (204. lap)

GAMBLERS
SW
AF 91 353
SW
AF 91 388
SW

Several USAF F-16CJs from Shaw AFB prepare to take off for an interdiction flight at Aviano Air Base. One of the pilots from Shaw shot down Lieutenant Colonel Pavlovic over Valjevo on 4 May 1999. (NAC)

The tail section of Lieutenant Colonel Pavlovic's MiG-29, No. 18109, was brought to the 204th Fighter Regiment HQ at Batajnica and remained there in remembrance of the regiment's commander. (B. Dimitrijević)

Regiment of the 82nd Airborne Division, tasked with protecting the air base at Rinas near Tirana, Albania, where the task force was to be stationed. In total, the task force had some 2,600 US Army personnel. After deployment, the unit was intended to attack Serb forces in Kosovo with a combination of Apache direct attacks and MLRS strikes from distance, especially when the 'regular' NATO strike aviation was unable to carry out such attacks.[42]

The first batch of 11 Apaches and 20 other helicopters landed at Rinas on 21 April, after having taken off from Germany on 14 April. Five days later, 24 more helicopters arrived. The Apaches' arrival coincided with a visit to Tirana by General Wesley Clark. General John Hendrix, who was in charge of Task Force Hawk, declared that it had achieved IOC (initial operational capability) on 26 April, and scheduled that it would be completely ready for operations on 7 May.[43] The USAF organised a major airlift from Ramstein into Albania, with Boeing C-17 transporters moving combat vehicles, protection troops and support equipment for the Apache deployment, with 635 missions.[44]

At Rinas, Task Force Hawk was in an unusual and chaotic environment, since the airport was also used as the major hub for the delivery of humanitarian aid to Kosovan refugees, whose number had increased to several hundred thousand. Without reducing the air campaign, NATO inaugurated an additional operation called Sustain Hope to airlift humanitarian supplies to the refugees in Albania. The United States played its part in a further new operation, Shining Hope. On 4 April, a USAF C-17 airlifted supplies from Dover AFB to Tirana, while the 86th Contingency Response Group from Ramstein deployed to Tirana, where they increased the airfield capacity to allow more than 400 daily take-offs and landings, where earlier there had been only 10. In the first month of Operation Sustain Hope, Allied transports airlifted more than 3,000 tons of food, medicine, tents, supplies, cots, blankets, sleeping bags and other relief cargo for refugees in camps located outside Kosovo. On 10 April, NATO approved Operation Allied Harbor, an additional humanitarian effort to aid refugees from Kosovo. This was also a great effort for the USAF C-17 fleet, which contributed 60 percent of all Allied Force transport missions and was "the favoured choice for commanders in the field."[45]

There was thus a constant flow of different transport aircraft at Rinas. Rain turned the aprons where the US Army helicopters were parked to mud. As seen in a TV news report, US Army officers who welcomed General Clark after he left his C-9 on the Tirana apron had muddy boots, which may serve as an indication of the environment in which Task Force Hawk operated. Soon, one Apache was lost during a training sortie on 26 April. An American ABC News film crew was incidentally present and filmed footage from the scene of the night-time incident, showing the moment when the helicopter crashed into a hill, with burning wreckage and two shocked pilots taken away from the scene. "Ironically it began as training mission to rescue a downed pilot'" reported Forest Sawyer of ABC News.[46] It proved a premonition for the Apaches' further operations.

Apache missions were planned to take place at night, in six-ship formations backed by other helicopters with MLRS as fire support. General Clark intended to use live ammunition exercises targeting the VJ units in Kosovo but did not get approval from Washington. During an exercise held on the night of 4-5 May, another Apache (88-0228), belonging to C Troop of the 6th Squadron/6th Cavalry Regiment, was lost and both crew members were killed. "Early indications had pointed to mechanical failure, but ultimately no cause could be determined," a later US Army report stated.[47] The helicopter crashed in the border area, which enabled the Serbs to spread claims that it had been brought down by their MANPADS while trying to attack a Serbian border post.

Four AH-64 Apaches landing at Rinas airport near Tirana in late April 1999. They belonged to Task Force Hawk, formed with such high expectations by SACEUR General Clark. (DoD)

A view from the control tower at Rinas: US crews which manned it communicate with one of the C-160 Transall transport aircraft, while the bulk of the AH-64 Apache helicopters are seen in the background. (DoD)

The loss of two state-of-the-art helicopters and two crew members reflected negatively on General Clark among the highest military and political circles back in the United States. The use of Apaches was consequently cancelled. They remained in Albania, but more as a sign of the alliance between the United States and Albania rather than a powerful tool to be used against the Serbian Third Army which was deployed in Kosovo, Metohija and southern Serbia.

Widening of the Target Lists and Further Collateral Damage; the Case of the Chinese Embassy

Daniel Haulman has written about the dilemma facing General Clark at this stage of the campaign:

> [He] was caught between two extremes: U.S. Air Force officers who wanted to attack more targets in the Yugoslavian capital, and certain NATO allies in Europe who wanted to severely limit the targets struck there … [On the other hand] NATO leaders would not authorize a ground campaign, and the U.S. Secretary of Defense would not allow the use of the helicopters over Kosovo, where they would be more vulnerable than the fighters to ground fire. As a result, Clark kept his operation focused [only] on an air campaign.[48]

Despite worries over the fierceness of the air war to attack targets that had already been damaged, the list of targets to be

General Wesley Clark, Supreme Allied Commander Europe, discusses matters with NATO personnel deployed to Aviano Air Base in Italy on 9 May 1999. (NAC)

bombed expanded during May. Most of them were actually infrastructure and civilian targets but were said to have been utilised for a military purpose. The hunt for Serbian troops in Kosovo continued, but with limited success as the Serbs used various tactics to avoid detection, including melting into populated areas or abandoned settlements. The British and French governments, fearing further collateral damage, introduced limits on targets within 500 metres of a settlement.

The unsuccessful debut of the Apaches was followed in forthcoming days by several serious cases of collateral damage. In broad daylight on 7 May, the city of Niš was attacked with cluster bombs. The streets of central Niš were littered with 14 dead civilians, while 30 others were seriously wounded. NATO tried to explain that Niš Air Base had been the target, but that an error had led to the centre of the city being hit. Amnesty International was again very critical of NATO over this tragic event.[49]

At 2350 hours on the same day, another serious incident occurred; this time one with political implications. On this occasion, bombs dropped by a B-2A Spirit stealth bomber, escorted by EA-6B Prowlers and F-15C fighters, hit the Chinese Embassy in Belgrade.[50] The building was heavily damaged by five GPS-guided JDAM bombs and three Chinese journalists were killed in the incident. The official US explanation was that the bomber had been targeting the nearby Federal Directory for Supplies, marked as target 'No 493', but that an outdated map had been used in planning the strike. Indeed, the two buildings were located very close to each other, separated only by the width of a Belgrade boulevard.

A B-2A Spirit was refuelled several times on its way to the Balkans and back to the US. (DoD)

A close-up of a KC-135 from the 100th ARW during the refuelling of a single EA-6B Prowler on a mission over Yugoslavia. (DoD)

Waking up on the morning of 8 May, General Clark had two very difficult cases of collateral damage on his plate: one with a high number of Serbian civilian casualties and the other creating a serious crisis in political relations with China. Seeing the building set ablaze on Serbian television, Clark initially refused to believe that US bombs had destroyed the Chinese Embassy, but soon scared and confused Chinese faces appeared in front of the building. "It was tragical mistake," Clark said. "There were no secret plans or plot to hit the Chinese." However, the "mistake" was irreparable, he concluded.[51]

At a press conference in the Pentagon on 10 May, Defense Secretary William Cohen explained that the Chinese Embassy had been hit by mistake, but that the air campaign against Serbia would continue.[52] Later, in December that year, the US government officially admitted the mistake and paid China $28 million to reimburse the families of the killed journalists and pay for damage to the building.

More cases of collateral damage followed, with a column of Albanian refugees hit in the Kosovo village of Korisha on 13 May, with more than 81 civilians killed and at least 70 badly wounded, including a number of children.[53] The explanation given was that Serb MUP or VJ forces had been in the village prior to the attack. The incident created heated debates among the allies, but nevertheless, the United States decided to maintain the tempo of the

A dramatic image of the former Central Committee of the Yugoslav Communist Party building at Novi Beograd, after being targeted by most likely JDAM munitions. The building was empty at the time, and while there were a few wounded civilians in neighbouring buildings, there were no fatalities during this strike. The targeting of this building was regarded by many as symbolic rather than useful. (USAF/DoD)

NOVI SAD PETROLEUM REFINERY, SERBIA
POST STRIKE

A refinery at Novi Sad after being targeted. The first image shows the scene immediately after the strike, while the second one was taken during the following day. (USAF/DoD)

campaign and continued hammering the Serbian infrastructure, no matter the collateral damage.

However, as a result of the moderate politics of Montenegro's President Djukanović, and as a means of forcing apart the leaderships of Serbia and Montenegro, NATO decided on 10 May that targets in Montenegro should no longer be attacked.

Planning for a ground invasion of Serbia had started during this period of Operation Allied Force. General Clark recalled that in the middle of May, a major difficulty for NATO was the impossibility of estimating the exact scale of the damage caused by air strikes, and even more to foresee it.[54] The wide variations in presenting the facts on what Serb weaponry had been destroyed was visible at this time in the regular press conferences held by General Charles Wald (USAF) and Walter Jertz (Bundeswehr, Supreme Headquarters Allied Powers Europe). The percentages given of destroyed (or probably destroyed) air defence systems, combat vehicles, command posts and other targets did not actually mean that the RV i PVO's defence had been seriously downgraded.

NATO Reinforcements Arrive in Theatre During May and Early June

During May 1999, NATO continued to reinforce its contingents in the theatre, although the American air assets were still the backbone and leading component in the war against Serbia.

On 3 May, for the first time since the Libyan intervention in 1986, USAF strike aircraft belonging to the 48th EFW, Strike Eagles from the 492nd EFS, took off from Lakenheath in the UK, carrying out a mission over Kosovo which targeted the air base near Priština. On the same day, eight more RCAF CF-18 Hornets landed at Aviano, while two returned to Canada.

By the beginning of May, the 171st Expeditionary Operations Group had arrived in Budapest, Hungary. It comprised some 500 members of the Pennsylvania and Washington Air National Guard, as well as active USAF personnel. The Expeditionary Group was equipped with KC-135 tankers, which were located at Budapest Ferihegy International Airport. Initial landing was tested on 5 May, after which more tankers started to arrive the next day, with an eventual total of 16. There were 10 from the 147th ARS/171st ARW Pennsylvania ANG and six from the 116th ARS/141st ARW Washington ANG. Up to the end of the operation, these 16 tankers logged 1,786 flying hours in 405 missions, refuelling 2,109 aircraft in a zone stretching from Hungary to the Adriatic Sea.[55]

On 7 May, US Defense Secretary William Kohen signed approval of a further strengthening of Allied Force assets, with a total of 176 US aircraft. These included a single squadron of 18 A-10s (from Nos 104, 110 and 124 Fighter Wings, Massachusetts, Michigan and Idaho ANG), a total of 18 F-16CJs (20th FW, Shaw AFB), two squadrons with 36 F-15Es (4th FW, Seymour Johnson AFB), two squadrons with 24 F/A-18Ds (Marine Aircraft Group 31, MCAS Beaufort) and

A Spanish Air Force EF-18A Hornet, coded 12-03 and armed with two Paveway LGBs, moves into position behind a KC-135R Stratotanker for refuelling. (NAC)

An EA-6B Prowler from VAQ-134, NAS Whidbey Island, Washington, heads for a parking spot at Aviano, after having its missiles made safe, on Friday 16 April 1999. The photo reveals the aircraft's typical payload of AN/ALQ-99 ECM containers and AGM-88 HARM missiles. (NAC)

80 more KC-135 tankers from different units. General Clark had requested some 300 aircraft as reinforcements but received only about half of them. However, the number of deployed US aircraft in the operation had now reached 800. The order also announced the activation of 2,800 members of the ANG, 524 USAF engineers of the Rapid Engineer Deployable Heavy Operational Repair Squadron Engineer (RED HORSE), 70 meteorological servicemen, a number of servicemen from the intelligence service and others, reaching a total of 5,035 mobilised men.[56]

First to deploy to the Balkan theatre was the ANG A-10 unit, which arrived at Trapani Air Base in Sicily on 19 May.[57] This was the 104th EOG, which consisted of 18 A-10s, 500 ANG members and 480 active USAF personnel. The aircraft – six from each – arrived from the 103rd FS/104th FW Massachusetts ANG, 190th FS/124th FW Idaho ANG and 172nd FS/110th FW Michigan ANG. They carried out their first mission over Kosovo on 21 May. This expeditionary group was under the control of the 52nd AEW, with its HQ in Spangdahlem. A detachment of three A-10s was soon deployed from Trapani to Taszar in Hungary for CSAR missions. There was no further deployment of A-10s to Taszar, and the detachment carried out only one combat mission until 16 June, when it left the air base.[58]

Two USMC F/A-18D Hornet squadrons – VMFA(AW)-332 and VMFA(AW)-533 – with 12 aircraft each, arrived at Taszar Air Base. They were part of Marine Aircraft Group 31 and arrived directly from MCAS Beaufort between 22 and 26 May. A support unit (Marine Wing Support Squadron 273) prepared the runway at Taszar, and the first test flights were carried out on 26 May. All of the deployed Hornets were capable for night missions and two of them had the new Advanced Tactical Air Reconnaissance System (ATARS). Their first strike mission against Yugoslavia was carried out at dawn on 28 May. The group had the advantage of being the closest to Serbia, and even Kosovo. To reach targets in Serbia took less than 20 minutes, while Kosovan targets could be reached after some 40 minutes of flying. The location of the air base at Taszar enabled strikes against targets in north and central Serbia without the usual long legs over the Adriatic, refuelling and passing the network of numerous Serb AAA and missile systems. They usually operated in pairs, but there were missions with up to 10 aircraft in the strike packages. A usual strike mission lasted up to an hour, but there were also CAP and A-FAC missions (210 in total) which extended up to seven hours. There were an average of 10 combat missions per Hornet. MAG-31 at Taszar used a standard ordnance assortment: GBU-10/12/16/24s, AGM-65 Mavericks and AGM-88 HARMs. The Hornet unit was also the first to employ the AGM-154 JSOW and ATARS reconnaissance system. The first mission with ATARS was carried out on 26 May by the aircraft of VMFA(AW)-332. This reconnaissance system was used up to 9 June in 22 missions, mostly for BDA purposes.[59]

By the end of May, it was expected that a total of 54 F-16CJs and F-15Es (20th FW and 4th FW) would arrive in Turkey. The Expeditionary Squadron with stealth F-117As was withdrawn on 29 May from Aviano to Spangdahlem, after almost four months on deployment. Finally, a squadron with 10 C-130s, activated in Little Rock, Arkansas, and designated as the 38th Air Expeditionary Squadron, entered the structure of the 86th AEW at Ramstein Air Base, Germany, to support the airlift missions in the theatre. By around 20 May, there were 31,600 US personnel and 650 aircraft engaged in Operation Allied Force.[60]

By the beginning of May, the RAF had deployed more aircraft to Allied Force: 16 Harrier GR.7s, 12 Tornado GR.1/GR.4s, three E-3D AWACS, four Tristar and VC-10 tankers, and a single Nimrod and a Canberra PR.9. During May, the RAF moved its 12 Tornados from Brüggen in Germany to Solenzara on Corsica; six aircraft each from No. 9 and No. 31 Squadron. This deployment made their usage over Kosovo much more effective, but it was carried out only between 2 and 9 June.[61]

An F-14 Tomcat assigned to the VF-41 Black Aces makes its final approach during an arrested landing aboard USS *Theodore Roosevelt*. (NAC)

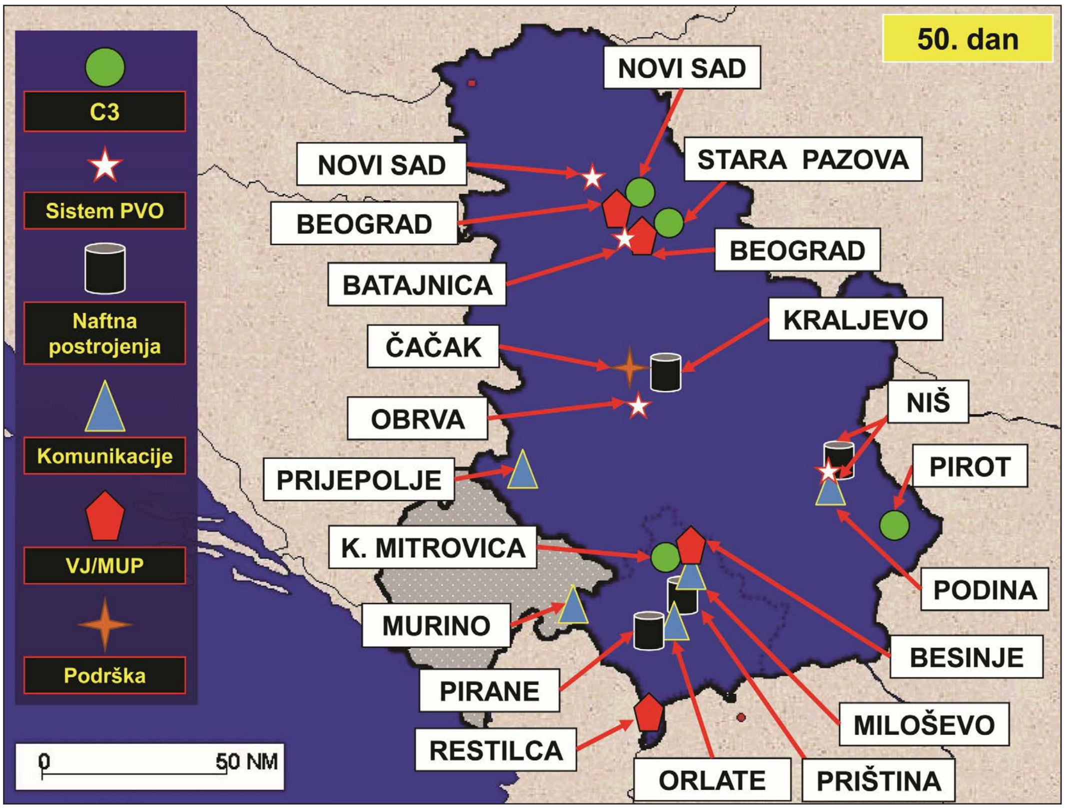
A Royal Danish Air Force F-16A, serial E-611, armed with AIM-120C AMRAAMs on the wing tips and AIM-9s. During Operation Allied Force Denmark participated in the air campaign with a number of F-16s stationed at Grazianese AFB in Italy, together with F-16s from Norway. Danish F-16s mostly undertook CAP missions. During the conflict, the RDAF also sent their updated MLU F-16s to Italy to make maximum effect of their AIM-120 missiles and the other advantages offered by the upgraded airframe. (NAC)

The French Armée de l' Air and Marine Nationale engaged in Operation Trident had important assets deployed during this period. In Italy, there were eight Mirage 2000C fighters[62] and Mirage F-1CR reconnaissance aircraft based at Grosseto and 15 Mirage 2000D strikers, 10 Mirage F.1CT fighters and 12 Jaguar A strikers at Istrana. Three reconnaissance Mirage IVP and C-160 Gabriels were at Base aérienne 126 at Solenzara, Corsica. French mainland air bases had additional resources, with six C-135FR tankers and E-3F AWACs. In the Adriatic Sea, the aircraft carrier *Foch* had 14 Super Etandards and four Etandard IVPs. *Foch* remained in the theatre until 1 June. The carrier air group carried out 878 sorties, including 412 strikes. Finally, three French Puma helicopters in Macedonia were tasked for CSAR missions.[63] The French Army HQ also took the decision on 9 April to send one Horizon Battlefield Air Ground Surveillance system (two Cougar helicopters) to the Kosovo theatre. On 26 April, the Horizon Detachment was declared operational at its Skoplje base in Macedonia. They usually operated some 15km south of the Yugoslav/Serbian border in Macedonian air space, controlling movements on the ground and trying to locate possible targets. The Horizon radar could 'see' about 125km into Kosovo or southern Serbia. Information gathered from the ground was sent to CAOC in Vicenca from mid-May, and after two weeks of checking

An AGM-88 HARM-equipped Tornado belonging to JbG-32 from Lechfeld, Germany, seen here as it approaches the refuelling drogue of a USAFE KC-135R Stratotanker. (NAC)

the figures were confirmed as the same as those obtained from USAF E-8 J-STARS.[64]

The Italian aircraft carrier *Giuseppe Garibaldi* had eight AV-8 Harrier IIs and six SH-3D helicopters aboard. The carrier was tasked with protecting Italian territorial waters during most of the earlier crisis as well as during Operation Allied Force. On 3 June, it was reallocated to the command of Southern Flank of NATO. Some 200 missions were carried by the Italian AV-8s, a similar number to those involving RN/RAF or USMC Harriers. The Italian Harriers used Mk-82, Mk-83 and GBU-16 bombs in combat missions. They were used as Airborne Forward Air Controllers or were maintained 'at standby' upon the request of the CAOC. Prior to this part of the engagement, the Italian AV-8Bs carried out their first strike missions over Kosovo on 13 May.[65]



Map depicting typical targets for one day during Opertion Allied Force. In this case it was the 50th day of the air campaign. Beside targets in Kosovo, it is obvious that most of the targets in Serbia proper belonged to air defence formations. (NATO)

Air Strikes on RV i PVO Assets in the Second Half of May

Air strikes and combating the Serbian air defences continued throughout May. The first daytime attack on targets in and around Belgrade occurred on 11 May. SEAD groups neutralised two of the three Neva Missile Battalions attacked around the city. In Kosovo, the 311th Missile Regiment, equipped with the Kub system, came under attack on 11 and 12 May. The remaining missile battalions of the 250th Missile Brigade were attacked during the following days. This sizeable unit – which still represented a formidable threat to NATO and USAF attacks above the 44th parallel – and its missile battalions were targeted almost daily at different locations. Other air defence units such as the 240th Regiment around Novi Sad and 450th Regiment in central Serbia were also under regular attack, but with less success. Meanwhile, the air bases in Serbia were pounded with unguided bombs during night missions, destroying their infrastructure more and more.[66]

Two cases of collateral damage in this period were especially tragic. On 30 May, an attack on a bridge in the centre of the town of Varvarin (central Serbia) left 11 civilians dead and 14 wounded. The following day, there was a second tragic attack on Surdulica (south-eastern Serbia), where a hospital was hit instead of a barracks, killing 19 patients and medical staff. Contrary to earlier practice, there were no further explanations at the regular NATO press briefings as to why these two incidents happened.[67]

During May, the average number of daily sorties ranged between 366 and 372, including around 250 combat sorties.

A fully loaded F-15E Strike Eagle with Paveway LGB and AAMs, seen here while being refuelled during its mission. (DoD)

In the last days of May, the number of sorties rose sharply: 26 May, 535; 27 May, 458; 28 May, 500. The targets, however, remained the same: air bases, communications, radar and air defence sites, storage areas and other complexes. In this period, six more aircraft were destroyed and four damaged on the ground, while two missile battalions and three radar platoons were neutralised, meaning that almost 90 percent of all air surveillance units were now out of service. This was a dramatic decline in the RV i PVO's air defence capabilities.[68]

During this period, the Yugoslav Air Force maintained an average of only one air surveillance company (equipped with AN/TPS-70) and one independent platoon in operational usage. They were augmented by several P-15 (Flat Face) radars borrowed from ground forces. Instead of radar air surveillance, a network of visual observers and SIGINT activities by the 280th Centre attempted to replace what had been lost of the radar 'picture'. Through these improvised methods, the operations centre managed to maintain information on NATO air strikes, using static telephone lines to warn units about possible air attacks.[69]

Meanwhile, the RV i PVO established a maintenance and repair line for observation or targeting radars and other support devices that were hit and damaged by AGM-88 HARM or various cluster bombs. This repair line helped to lessen the effects of the destruction caused by the SEAD groups. By repairing the damaged radars, up to four Neva Missile Battalions and 11 Kub Missile Batteries remained operational at the end of May.[70]

After the attack on Batajnica which resulted in three destroyed MiG-21s, orders were issued from RV i PVO HQ that all remaining combat aircraft should be disassembled, taken away from the air bases and hidden in various neighbouring civil structures or infrastructure, such as tunnels or below bridges. At Batajnica (204th Fighter Regiment), disassembling started on 21 May, and at Ponikve and Ladjevci (98th Regiment) a week later. This decision, which was made much later than had been recommended by the technical branch of the RV i PVO, meant that many combat aircraft were spared from destruction.

Last 10 days of Allied Force: 1-10 June 1999

The closing period of Operation Allied Force was characterised by two issues. The NATO and US senior leadership started to plan a major land operation – an invasion from Macedonia. The President of the United States, Bill Clinton, and British Prime Minister Tony Blair approved NATO General Secretary Xavier Solana to start working on preparations for the land operation. Meanwhile, the political leaders reopened the negotiation process with Slobodan Milošević. Diplomacy took the stand once again, and a political solution seemed to be in sight.

Members of the 126th Air Surveillance Brigade prepare an S-600 radar at an improvised radar position. Despite their constant movement, the brigade's radars continued to be targeted, and by the end of the campaign only a few remained operational. (J. Draganić)

Despite the diplomatic process restarting, the first days of June brought more NATO missions over Serbia. It was the second most intensive week in the whole of Operation Allied Force, with a total of 2,217 sorties. Most targets were in Kosovo, but there were missions in Serbia proper too. This period was characterised by the intensive use of B-1B and B-52H bombers, with the 'Bones' used in carpet bombing of Batajnica Air Base.[71]

Veteran B-52s were engaged in a large-scale operation pounding VJ units (549th Motorised Brigade with reinforcements) at Mount Paštrik, which stretches through the border region between Serbia and Albania. On 7 June, two B-52s and one B-1 dropped 86 Mk 82 munitions and cluster bombs on Serbian troops in Kosovo.[72] This mission was carried out to assist the large KLA offensive (known as Operation Arrow or the battle for Paštrik) over the Albanian border into the Metohija region between Djakovica and Prizren. The RAF also continued to target Yugoslav Army troops in Kosovo with standard BL755 cluster bombs.[73]

The Serbian RV i PVO was continuously targeted in this final period of Allied Force. There were 30 attacks on various locations, including 13 against air bases and 10 targeting missile/air defence units. The most difficult night for the defenders was that of 31 May/1 June, when the RV i PVO suffered serious losses at positions in Vojvodina:

Late on 31 May, a large strike package entered Yugoslav airspace, backed by a SEAD group. At 0008 hours on 1 June, the 4th Battery of the 240th Missile Regiment at Nadalj near Novi Sad launched Kub missiles against the advancing formation. However, within minutes the battery was hit by HARM missiles fired by the SEAD group. One launching vehicle was destroyed, with two members of the crew killed and one wounded. The SEAD group continued into south Banat, some 20 miles east of Belgrade, patrolling over the deployed 2nd Battery of the 310th Missile Regiment. Assistant to the Minster of Defence and former RV i PVO commander Colonel General Veličković had recently arrived at a firing position near the village of Omoljica with some of his assistants. Hearing that the Kub battery had been destroyed at Novi Sad, he ordered the nearby Kub battery commander to attack the SEAD group, which was orbiting within range of his missiles. Despite the serious danger and it being against previous practice, the R-StON radar (Straight Flush) was started up. At 0024 hours, after only seven seconds of illumination, a HARM missile destroyed the radar, killing battery commander Captain Trifunović, General Veličković and his assistant, Colonel Pejcic. Two other officers standing near the radar vehicle were badly wounded. The SEAD group continued orbiting at 8,000 metres in central Banat, starting to withdraw north at 0200 hours. At 0218

Colonel General Ljubiša Veličković, a former RV i PVO commander, was killed during a SEAD attack at Omoljica in southern Banat on 1 June. He is seen here during the October crisis in 1998, sitting in a MiG-29 cockpit in front of the Vranica HAS at Batajnica. (M D Ristić)

Seen at Fairford, a B-1B Lancer of the 77th ERS (from the 28th BW, based at Ellsworth) is ready to take off for a mission over Serbia. (DoD)

A B-52H Stratofortress, from the 5th Bomb Wing based at Minot AFB, takes off from RAF Fairford. (NAC)

An F-16C Block 50 (91-0406) of the 23rd EFS rolls out at Aviano for another SEAD mission over Serbia. The 'Viper' is fully loaded with two AGM-88 HARMs, HTS-213 targeting system, AN/ALQ-131 ECM-pod and four AIM-120 AMRAAMs. (DoD)

An F-16CG Block 40 (No. 89-2039) of the 555th 'Triple Nickel' EFS departs from its home base at Aviano, loaded with two PGMs, a LANTIRN (Low Altitude Navigation and Targeting Infrared for Night) pod and a typical AAM load. (National Archives Catalogue)

hours, it carried out another attack on the 4th Battery of the 240th Missile Regiment in Nadalj, destroying several more launch vehicles and radars. This time two personnel were wounded. It was worst night of losses for the Serbian air defence in the whole war, with two Kub batteries knocked out, and five personnel killed and another five seriously hurt. General Veličković, an ardent NATO opponent, became the highest-ranking casualty of the Yugoslav Army in the campaign.[74]

The following attacks on the night of 2 June passed without consequence for units of the 250th Missile Brigade. The last attack on Serbian air defence units occurred on 7 June at 2352 hours. The 3rd Battalion of the 250th Missile Brigade was targeted, but HARM missiles hit the IRZ, which imitated radar emissions.[75] On the same night of 7-8 June, a dummy MiG-29 was destroyed at Batajnica. This, the last air attack in the campaign, occurred between 2352 hours and 0015 hours. The F-16 pilot who destroyed the dummy MiG-29 and evade air defences was later decorated with the Silver Star.[76]

At a Department of Defense press conference, General Wald commented on the targeting of several locations and targets in the usual manner, claiming a high number of targets were destroyed. He also noted the improving weather in the theatre, the increasing number of NATO sorties and the UCK offensive,[77] which may have been a clear sign of a further expansion of hostilities. However, diplomatic contacts with Belgrade had started to be re-established in a renewed attempt to bring the fighting to an end.

In the last week of Operation Allied Force, more USAF assets were deployed to the theatre. On 2 June, the 39th AEW was activated at Incirlik with tankers from the 108th ARW of the New Jersey ANG and additional personnel from Mayne ANG, with some 20 tankers and 750 men in all. The remaining F-16CJs from the 20th FW at Shaw reached the air base at Bandirma in Turkey. Then, between 4 and 6 June, the 22nd EFS of the 52nd EFW was deployed to Aviano to replace its sister unit, the 23rd EFS, which returned to Spangdahlem.[78]

6

THE END OF ALLIED FORCE

Diplomatic Efforts and the Kumanovo Agreement

After intensive diplomatic negotiations between the international community and Belgrade, talks between Yugoslav and NATO generals started on 5 June in a restaurant with the symbolic name 'Evropa 1993', close to the Serb–Macedonian border. The owner of the establishment was a local Albanian. NATO representatives were tough in their demands, insisted upon the conditions that had been set out in the Washington NATO summit. Yugoslav (Serbian) generals were surprised by such an approach. There were thus several interruptions in the negotiations, which were moved first to the French army base at Kumanovo and later to Tabanovce, a village on the border with Serbia.

The pauses in the talks were also caused by the continuation of the NATO air strikes in Kosovo (mostly in support of UCK forces in their attempted offensive in the Paštrik area) and against Batajnica Air Base. After consultations between President Milošević and NATO officials during 9 and 10 June, a final agreement was outlined. Milošević accepted that the Yugoslav Army and Serbian police should abandon Kosovo and Metohija province and turn over the security of the region to the NATO-led Kosovo Force (KFOR), while the civil administration would be undertaken by UN Mission in Kosovo (UNMIK) authorities. This was the political pretext whereby Operation Allied Force came to an end.[1]

During the final two days of Allied Force, NATO carried out 408 sorties on 9 June and 154 sorties on 10 June. It was only at 1536 hours on 10 June that the SACEUR, General Clark, ordered that Operation Allied Force should cease. At 1610 hours, aircraft which were in Yugoslav air space started to withdraw to their bases. The air campaign, and the last European war of the 20th century, was over.[2]

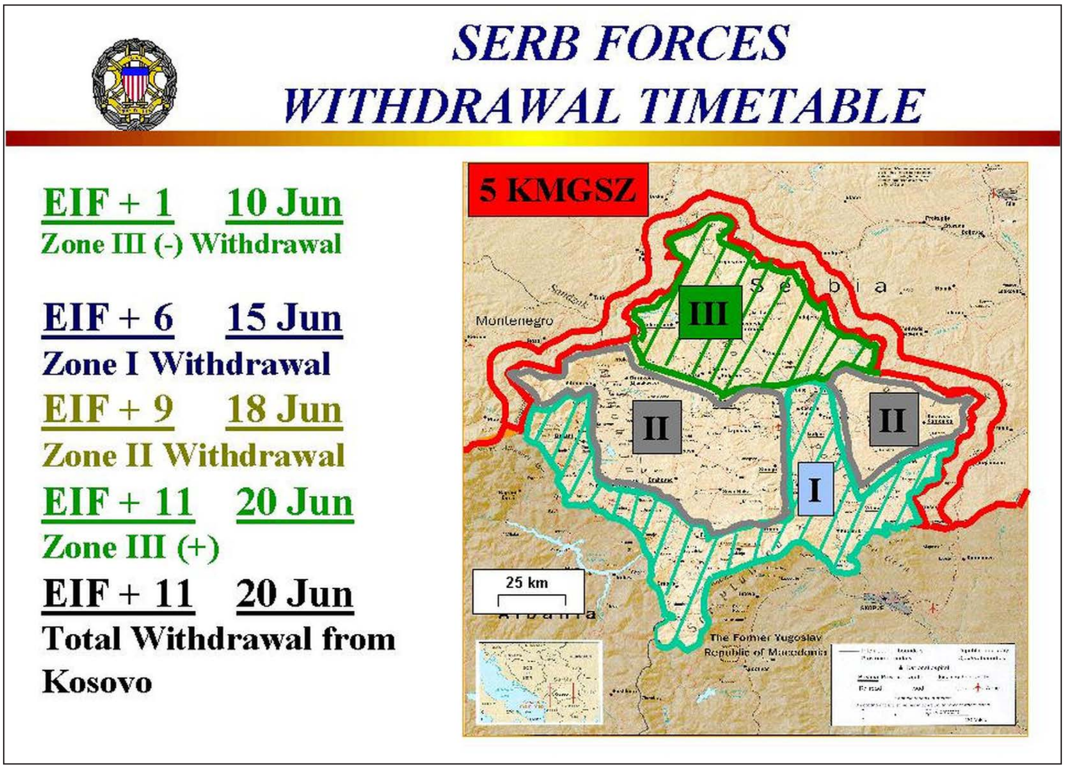
At a press conference held at Kumanovo at 2145 hours local time, British Army General Mike Jackson and VJ General Svetozar Marjanović announced the conclusion of negotiations and the end of the whole campaign. The cessation of combat operations was celebrated by Yugoslav/Serbian troops later that night with shouting, singing and occasional bursts of their firearms.

In their address to the public, the two generals announced that under the Kumanovo Military Technical Agreement, Yugoslav Army and MUP Srbije forces were to abandon Kosovo and Metohija province. In their place, the NATO-led Kosovo Force would be deployed to secure peace in the province. The deadline for the VJ and MUP withdrawal was set for 11 days hence. Three withdrawal zones were established:

- Zone 1: southern parts of Kosovo and Metohija: Prizren, Djakovica, Uroševac, then Priština and Priština Air Base – withdrawal of VJ and MUP forces in six days.
- Zone 2: central parts of Kosovo – withdrawal of VJ and MUP forces in nine days.
- Zone 3: northern parts of Kosovo: Kosovska Mitrovica and Leposavić – withdrawal of VJ and MUP forces in 11 days.[3]

It was agreed that all withdrawals should be only into Serbia, and not into Montenegro. A 'Ground Safety Zone' – a 5km area around Kosovo inside Serbia proper – was established as an exclusion

A scene from the negotiations between NATO and Yugoslav/Serbian officials which led to the so-called Military Technical Agreement announced on 10 June 1999. Pictured in a tent near the Serbia–Macedonia border is General Mike Jackson, the assigned commander of Kosovo Force, with, facing the camera from right to left, Ambassador Vujović (Yugoslav Foreign Ministry) and generals Kovaćević, Marjanović (VJ) and Stevanović (MUP). (Medija centar Odbrana) zone for VJ and MUP forces. An 'Air Safety Zone' was also established, and all flying activity was banned in a 25km zone around the province. After the withdrawal, all RV i PVO flights over the province were banned, and no radar tracking or illumination was allowed of the NATO aircraft which were supporting the KFOR mission.[4]


SERB FORCES
WITHDRAWAL TIMETABLE

EIF + 1 10 Jun
Zone III (-) Withdrawal

EIF + 6 15 Jun
Zone I Withdrawal

EIF + 9 18 Jun
Zone II Withdrawal

EIF + 11 20 Jun
Zone III (+)

EIF + 11 20 Jun
Total Withdrawal from Kosovo

Map showing the agreed tempo of VJ and MUP withdrawal from Kosovo and Metohija province between 10 and 20 June 1999. (NATO)

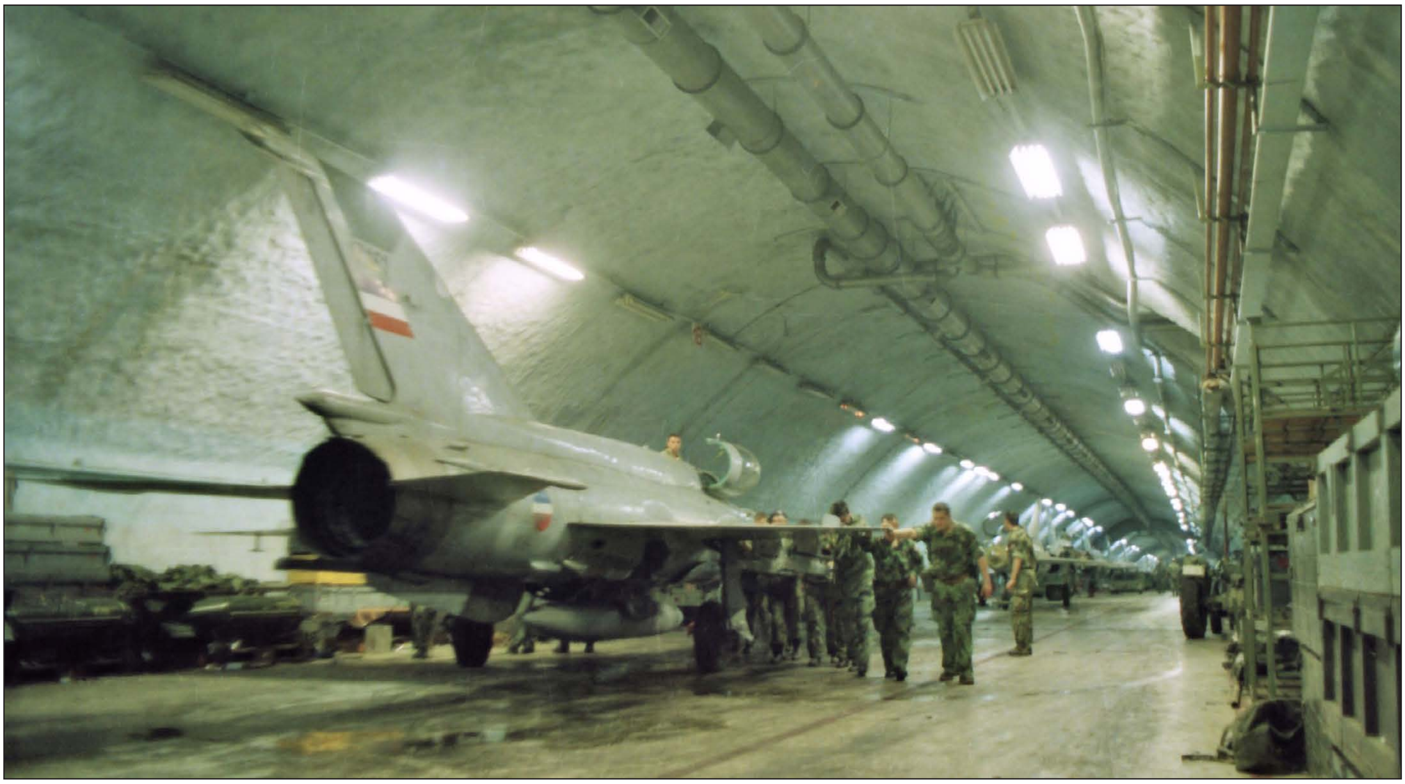
Resolution 1244, which was adopted at the UN Security Council session on 10 June, was a lengthy one outlining the agreed conditions and future status of Kosovo province. It verified the withdrawal of Yugoslav/Serbian military and police forces, the demilitarising of UCK (KLA) forces, the establishing of a UN mission that would act as the administration of the province, and the presence of an international force "with substantial North Atlantic Treaty Organization participation" to maintain peace in the province. The resolution also established a secure environment for the return of Kosovo Albanian refugees from neighbouring countries and freedom of movement in the province.[5]

RV i PVO Units Withdraw from Kosovo

Despite the tight schedule for their withdrawal, the Yugoslav (Serbian) forces fulfilled the agreement to the last letter. The RV i PVO units were the first to abandon Kosovo under the strict terms of the Kumanovo Agreement.

The remaining 12 aircraft of the 83rd Fighter Regiment were taken out of the underground Rudnik complex during the afternoon of 11 June. There were eight MiG-21bis, three MiG-21UMa and a

The commander of the 83rd Fighter Regiment, Lieutenant Colonel Gvozden 'Uroš' Urošević, gives the final instructions to his pilots and ground crews at the ramp of the badly damaged Priština Air Base, prior to the movement to Batajnica on the afternoon of 11 June 1999. (M. Špica)



Technicians turn their surviving MiG-21s in the narrow underground corridor of the Rudnik complex before they are taken out and prepared for their last sortie from Priština Air Base on 11 June 1999. (M. Špica)

The salute is given before the final take off from Priština Air Base. (M. Špica)

single-piston Utva-75. It was a surprise to NATO observers that the regiment managed to keep so many airworthy MiGs until the end of the operation. The northern entrance of the complex was still blocked by the indirect hit from April and the ground crew had difficulty turning each of the aircraft in the underground gallery to take them out of the southern entrance. After a short speech by the 83rd Regiment's commander, Colonel Urošević, the groups of chosen pilots entered the cockpits and took off for Batajnica. In groups of two or four, they took off and made a last symbolic flypast over Priština. In total radio silence, they continued north. The pilots testified that due to the complete absence of other air traffic, the silence was total and the feeling was eerie. They landed at the destroyed Batajnica Air Base between 1633 hours and 1732 hours. The pilots and MiGs from Priština were welcomed by half-surprised, half-cautious ground crews of the 204th Fighter Regiment. The ground crews of the 83rd Fighter Regiment reached Batajnica in their vehicles on the following day.[6]

Air defence units started their withdrawal on the same day, 11 June. These were the 311th Missile Regiment with the Kub missile system and the 52nd Light AA Air Defence Brigade, which belonged to the Third Army. Both units had been scattered all over Kosovo and Metohija during the previous months. They were now assembled and proceeded into Serbia proper. Most of the 311th Regiment's Kub systems were moving on their tracked launching vehicles, with mounted missiles and R-StON radars, while a few were ferried on trailers.[7] The 311th Regiment eventually reached Kragujevac, while the 52nd Brigade settled in Niš.

Two units of the 31st Air Surveillance Battalion – the 1st and 3rd Radar Company from Mount Kopaonik and Mount Goleš – abandoned their previous peacetime positions.[8] The last RV i PVO unit to withdraw was the 492nd Air Base, which was responsible for the air base at Priština. This unit withdrew to Niš Air Base, while its 492nd Light AA Air Defence Regiment settled at Ladjevci Air Base.[9]

Ground crew observe the taking off of four MiG-21s heading for Batajnica on the afternoon of 11 June 1999. (M. Špica)

The commander of the RV i PVO, Lieutenant General Spasoje 'Paja' Smiljanić address the pilots who arrived from Priština around 1730 hours on 11 June 1999. On his right is Lieutenant General Branislav 'Bane' Petrović, commander of the Air Corps, and on his left the acting commander of the 204th Fighter Regiment, Lieutenant Colonel Milan 'Blek' Milinković. All of them were MiG-21 pilots. (S. Grgić)

All of the RV i PVO units that were based in Kosovo and Metohija province up until June 1999 were disbanded a couple of months later and their personnel joined units at the air bases where they arrived.[10]

The Yugoslav Army ground force units and MUP forces followed the withdrawal to Serbia proper up to the agreed deadline, mostly deploying to the garrisons in south-eastern and central Serbia.[11] At 1300 hours on 20 June, the final VJ forces abandoned Kosovo, thus fulfilling the agreement 11 hours early, as a NATO spokesman announced. There were now no Serbian/Yugoslav forces in a province that had so much historical importance for the Serbs.

The first NATO-led KFOR forces entered the province from Macedonia at 0510 hours on the morning of 12 June. They were British forces, Gurkhas mainly, who were ferried by RAF Chinook helicopters from No. 27 Squadron deeper into the province, reaching Priština the next day.[12] They were followed by French forces, which continued to Gnjilane. From the Albanian side, the Italians reached Peć, while the Germans arrived at Prizren. US Army forces were the last to enter the province.[13]

During the initial phase of KFOR's deployment, an incident occurred which threatened to escalate into a wider conflict. The Belgrade regime, after consulting with Russian military leaders, had decided to hamper the early stage of the KFOR deployment. There was a Russian battalion based in Ugljevik, in Republika Srpska/Bosnia and Herzegovina, as part of the Stabilization Force (SFOR). The Russian unit deployed a mechanised column, which crossed into Serbia and pushed ahead on its motorways to reach Kosovo at 0045 hours on 12 June and the Priština Air Base shortly after at 0215 hours. The motley column of 15 BTR-80 APCs and some 30 other vehicles was cheered by the Serbs who had chosen to remain in Kosovo. Previously, they had observed with scary silence the withdrawal of VJ and MUP forces out of Kosovo, and now to their surprise there was a Russian formation there at Priština, where the last remaining 492nd Air Base personnel were packing their belongings to leave. The Russians took over the air base at 0600 hours that day when the RV i PVO unit finally abandoned the area.

The first KFOR forces reached Priština on 13 June. An incident then occurred in the vicinity of the air base at 1030 hours,[14] with the Russians blocking the deployment of French and British forces. A column of British Army Challenger tanks were stopped by the Russians, and the NATO forces then withdrew. The British officer in charge of the patrol played down the incident, saying that contact between his men and the Russians was cordial, but even so, the roadblock remained in place.[15] Informed of events at Priština, SACEUR General Clark insisted that the uninvited Russian 'guests' should be fired upon, but at the scene, KFOR commander General Mike Jackson managed to negotiate the further deployment of his forces to the air base. He later explained that General Clark had insisted on the air base being taken prior to the Russians' arrival, before the time set by the Yugoslav Army for the base to be turned over to KFOR. Jackson was aware of the risk of an unintended clash between Russian and British troops on the ground. He met General

Units of the 240th Self-Propelled Air Defence Regiment, seen while returning to their destroyed barracks in Novi Sad. (240. srp PVO)

Clark became legendary, the British general stating that "I'm not going to start World War Three for you!"[16]

This incident showed the NATO senior leadership just how unpredictable an opponent Slobodan Milošević could be, and how the situation on the ground could complicate and escalate into a serious clash in a moment if forces were commanded from a distance, as was the case with General Clark.

Zavarzin, who commanded the Russian contingent, and established friendly personal terms with his counterpart. Jackson thus became aware of the weakness of the Russian unit which faced the NATO forces; there was to be no massive deployment of Russian forces, as General Clark feared. All that was there was a small and isolated unit, far from its main SFOR base. The conversation between Jackson and

Withdrawal of Allied Air Assets from the Theatre

The end of Operation Allied Force was also cheered by the airmen of the NATO aerial forces. Hundreds of them gathered in Hangar No. 4 at Aviano Air Base on 11 June for a 'hangar party' to celebrate the end of the campaign. They were addressed by General Daniel Leaf, commander of the 31st AEW, USAFE, who had also logged 19 sorties during the operation. On 22 June, President Clinton, accompanied by the Italian Minster of Defence, visited Aviano and thanked the airmen for their efforts during the campaign.[17]

The return of the Neva missiles to the storage areas of the 2nd Missile-Technical Battalion in Zuce, below Mount Avala, was hard work for the 250th Brigade personnel, taking almost the whole of the summer of 1999. (250. rbr PVO)

E.I.822
ESERCITO
KFOR

An Italian Army CH-47 Chinook, seen while landing in support of KFOR forces during the formation's initial deployment. (KFOR-Rear)

USAFE
40527

A typical view of the security forces that guarded Aviano Air Base during Operation Allied Force, with the tail of a C-130 Hercules, serialled 40527, symbolising the efforts of the USAFE during the campaign. (NAC)

Also on 22 June, US Secretary of Defense William Cohen approved the withdrawal of the USAF assets that had taken part in the campaign. The first group to stand down included the aircraft of the USAF units based in CONUS. These included: at Spangdahlem, a complete fleet of F-117As, which left for Holloman AFB between 25 and 30 June;[18] at Aviano, two EC-130Es, which went back to Davis Monthan AFB, and seven EA-6B Prowlers, which returned to their naval bases at Cherry Point and Whidbey Island; at Fairford, 11 B-52Hs, which took off on 23 June for Minot and Barksdale, and six B-1Bs, which left for Ellsworth on 24 June; at Bandirma, 12 F-16CJs, which returned to Shaw AFB; at Incirlik, the 108th ARW, which took off on 24 June; and at Taszar, 24 F/A-18s of the 1st Marine Air Group, which left on 1 July for their home base at Beufort, and a single P-3C Orion from NAS Sigonella, which returned to Brunswick Air Base. The withdrawal also included 27 KC-135 tankers from different CONUS units, which left the theatre in stages. Later, 243 more CONUS-based aircraft withdrew to their home bases.

The withdrawal also included USAFE assets which were in the easiest position to return to their home bases. At Gioia dell Cole, the 81st EFS returned to Spangdahlem on 22 June. On the following day, 20 F-16CJs of the 22nd EFS returned from Aviano to Spangdahlem.[19] They were followed by 26 F-15Es (Nos 492 and 494 EFS), which flew back to Lakenheath a couple of days later. Those forces which were stationed in Albania, belonging to the US Army in Europe, withdrew later.

Smaller NATO air contingents also withdraw during this period. On 22 June, RAF Tornados from Solenzara went back to RAF Brüggen in Germany, while on 23 June, 10 Harrier GR.7s abandoned Gioia del Colle and headed for RAF Wittering, and a VC-10 tanker detachment from Ancona returned to RAF Brize Norton.[20] On 25 June, 12 RNLAF F-16s left for the Netherlands, while eight remained in Italy. The Canadians also withdrew 12 of their CF-18 Hornets, with six of them staying in Italy, being based

President Clinton addresses the USAF and NATO airmen in a hangar at Aviano on 22 June 1999. Visible at the rear is an F-14 from USS *Theodore Roosevelt*. (DoD)

A total of 24 F-117A Nighthawks left European bases for Holloman AFB between 25 and 30 June 1999. (DoD)

Family and friends at Shaw Air Force Base, South Carolina, welcome home F-16CJ pilots from Operation Allied Force on 30 June 1999. (NAC)

Grumman EA-6B Prowlers belonging to the VAQ-141 Shadowhawks, seen on USS *Theodore Roosevelt* during Operation Allied Force. During the intense 70-day conflict, the squadron distinguished itself by not a single coalition aircraft being lost to enemy air defences while one of its Prowlers was on station. (DoD)

RCAF CF-18 Hornets depart Aviano Air Base in Italy after contributing 2,600 combat flying hours in support of NATO's Operation Allied Force. (NAC)

with the Spanish 'Icarus' detachment F/A-18s at Istrana between August and October 1999.[21]

These NATO assets were subsequently used in another operation. On 10 June, the North Atlantic Council approved Operation Allied/Joint Guardian which was to secure the deployment of KFOR for its initial functions. This mission retained the chain of command used in Allied Force and some of the NATO forces that remained in the region for CAPs and monitoring the development of the situation in the Balkans.[22]

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Chapter 6

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